#### NEWS IN BRIEF

### Anaheim debut of disc drives

AlMING at the OEM and small systems markets, Calcomp and CDC are due to launch new disc drive ranges next month. Calcomp's product, known as Marksman, is a Winchester-type drive with a capacity of 17 Mbytes. OEM prices are said to be under £700, lower than Shugart's new SA 4000 series.

CDC's system is to be introduced at the National Computing Conference at Anahelm, and is part of the IBM Series I compatible range of peripherals (CW, February 2). An 18 Mbyte model is said to cost about 08,000, with 60 Mbyte and 240 Mbyte versions costing about £10,000 and £14,000 respectively.

#### \$1,000m orders

LITTLE more than 18 months after its launch, the top-end 1100/80 system is shaping up as Univac's most successful mainframe product since the 1108. Worldwide orders stand at 120, worth close to \$1,000 million,

#### NY manager

SALES of ICL equipment in the New York region are to be handled by Gordon Ball, formerly with Cincinnati Milacron. Ball has been appointed manager of the New York office in place of Clive Smith

#### 'Cartel' criticism

THE technology and production methods being developed by the Japanese for very large scale integration devices is to be made available to third parties, including foreign computer companies. The move stems from the pressure of overseas criticism against a Japanese "technology

#### THE meeting at the Commons between MPs and the top brass of ICL, which had been called ostensibly to discuss the Auditor General's criticism of the company (CW, April 13), turned out to be quite a cosy affair. In the event nobody even mentioned the Auditor General's report.

But only five MPs and one peer turned up the meeting coincided with Sir Geoffrey Howe's speech in response to the Budget, and computers had to take second place to the weighty issues of finance.

Dr Chris Wilson, ICL's managing director, gave a presentation impressing on the MPs the value of ICL to the balance of payments and what a disaster it would be to the employment

"ICL is a jewel — Cherish it" pleaded his flipcharts. He quoted not only the numbers of

Data Logic early this year (CW, January 5), Cossor Electronics

has taken over another London

software house, Computer Sys-

tems and Programming. The

move is described as part of the

expansion of Data Logic, within which CSP will be assimilated as

an operating division. In the deal, completed on May

Cossor has purchased all the

issued share capital of CSP from

Charringtons Industrial Hol-

dings. Charringtons, the fuel

"THE days are over when you

called in the manufacturer's

salesman to determine what you

needed to increase installa-

tion throughput. I like to think

This was the view expressed

founder and president of

ECOMA - the European Com-

puter Measurement Association.

first London conference of

ECOMA, which was attended by

about 250 European specialists

Yasler was speaking after the

that the user can independently decide what he needs."

Cossor takes over

employees the firm and its suppliers have, but the numbers of their dependents as well. One MP asked whether there was any point

'ICL is a jewel—cherish it', MPs told

in an R&D expenditure that was only 1% of IBM's. Wilson pointed out that ICL took advantage of the R&D of all its component suppliers worldwide, while IBM duplicated oil this work itself.

COMPUTER WEEKLY

Asked why there was not more large-scale co-operation with Europe, the ICL men pointed out that they had been criticised for not joining the European Unidate project, and that project had then collapsed, simply because all it had tried to do was copy IBM.

Eric Moonman, Lebour MP for Basildon, who organised the meeting, sold he was still unhappy that there was not a stronger Another MP asked what ICL was doing

appeared he was under the impression that big computers are made by big companies and small computers by small companies. Nobody seemed eager to tell him that Digital Equip-ment is a large company and Cray a small company. They pointed out that ICL had bought Singer, and it was a least-warming moment when they described how proud this success in the American market had made

In the end it was decided that what was needed was another meeting, at which the MPs could learn more about ICL's thinking. In the meantime ICL can take comfort that there do not appear to be any MPs at the moment who are interested enough in the company to cut it off without a sou — or without a preferential procurement policy.

# another software house

The existing managing director, Clive Woolton, will become divisional manager within Data operations will bring Data Logic staff up to 275. It will also bring board some complementary

skills, said a spokesman, notably in small IBM systems. CSP's Soho Square offices would also provide a useful conference and demonstration base owned CSP for almost two years.

and vehicle distributors, has in central London, he said. Charringtons' other com-

of whom it is intended to retain. Stortford, Herts service bureau is not part of the deal. Charringtons was itself taken

over only last October by the Coalite and Chemical Products company. A spokesman said that the disposal of CSP was not related, but had followed an approach from Cossor.

Although Charringtons had netimes used CSP services, it had also used other companies,

The value of the deal has not been disclosed but is understood to be under £200,000.

still to be fixed.

be accepted for the competition, anyone wishing to assist in any of the events, should contact Gordon Cairns at John Golds mith Computer Services, 15 Buckingham Palace Road, London SWI OPP, Tel: 01-828 5356.

# 166 teams

nationwide Computastars sports competition for DP personnel will take place in Bingley. Yorkshire on Sunday May 14. with 20 male and eight female

The other regional heats will take place at the Whitchurch Sports Centre, Bristol, on May 21; the Croydon Sports Arena on June 11 for London South; the Wealdstone Stadium on June 18 for London North; the Kirkhy Stadium, Liverpool on June 25 and at Birmingham on a date

Although no more teams will

180 C.P.S. TELEPHINTER NEW PRICES

1 OFF - £1995

\* 180 c.p.s. printing at transmission speeds up to 4800 band

Manual in Lorse declarate in 1 to 1 parties of the state of Parties of the State of

\* Full proven 7x7-Dot Mastis Print Head

thited Kingdom, SAIS

Microprocessor controlled "smart"

singipuositi mumisem sol. gnimise

\* 1K FIFO input buffer with overflow



Thursday, May 11, 1978

Price 18p

Visual Display Terminals PRICES

NEWBURY

The home of Low Cost

. FROM £535 Newbury Laboratories Ltd.

Head Office & Sales King Street, Odiham Hampshire RG25 1NN Tel 025-671 2910 Tulex 858815

# Software support for 1900 piedge to users

for "at least seven years", and a prediction ties and delays, but he added that there had that in 10 years' time ICL would have a £2.5 been no fundamental design problems and billion turnover with over two-thirds outside that in a few years' time, when other the UK, were the main messages given by ICL directors to the ICL Computer Users' product lines, ICL would have a "fully ma-

In what most delegates regarded a competent, although low-key speech, ICL At a Press conference, he also said that it emphasised that he believed that ICL's decision 10 years ago to develop the new architecture of the 2900 would put the company in an extremely strong position once by about £1,000 million over five years. the initial development problems had been ironed out.

**Briefing** 

harmony plea

ALL legislation concerned with

the relationship between com-

puters and privacy, data protec-

tion and security should be har-

monised by a standing commit-

tee to be established under the

auspices of the Council of

Europe, according to the

European Computing Services

In a paper submitted to the

Harris £3m order

A MAJOR IBM user, Cadbury

Schweppes, has gone to plug

compatible manufacturer.

Harris Systems, for £3 million

systems to handle jobs like order

Association.

regulations

European

He admitted that the 2900 development Ellis.

tured" range.

Number 600

He said he believed that ICL could conwas vital for the government to continue its

procurement policy favouring ICL He said The commitment to the 1900 series was

made by ICL's marketing director, Peter

Mixed reaction to Sir

THE Post Office Engineering Union strongly disagrees with Sir Keith Joseph's views expressed mend", said the union official.

**Keith on Post Office** 

in his Computer Weekly inter-view (CW, April 27) that telecommunications should be

freed "as totally as possible"

from the control of the Post
Office. But Sir Keith's views have
been welcomed by Racal.
"Once every Tom, Dick and
Harry connects his own equipment to telephone lines, there's
no telling what problems could
result," said a POEU spokesman.
"We are not uncritical of Post
Office operations for from the

Office operations, far from it. They should be much closer in

speedler in acting on them. To this end the marketing budget has recently been doubled to £7 mil-

h with market needs, and

Ellis pointed out that it will take five years before the ICL mainframe installed customer base becomes predominantly 2900 series and that ICL was fully aware of the importance of its 1900 and System 4 users, from which it saw its major 2900 growth

New 1900 systems were still being delivered, he said, and these are automatically covered by seven year maintenance con-

He said that ICL would attempt to ensure wherever possible that new peripheral devices would be available to 1900 and System 4 users, although he could not promise that this would be feasible for all devices. More on Eastbourne convention — pages 2,



Top ICL directors attended the ICL Computer Users' Association convention in Eastbourne last week to tell users that the "wind of change" would be ridden by ICL to a profitable future. Seen here in front of the convention centre in Eastbourne are (left to right) ICL managing director Or Chris Wilson, marketing director Peter Ellia and director of external

# EEC leads on

towards growing user independence from manufacturers has been made by the establishment of a working party within the EEC looking at the role public procurement can play in implementing international standards, and by a call from the chairman of the ICL Computer Users' Association for British government backing for user groups which are studying pro-

lems that concern all users.

A proposal has been made that all government computer procurement contracts should

include a clause which requires companies bidding for a connation of their input-output and terminal interface standards. Another proposal being con-

sidered is that manufacturers tendering for government contracts should provide software to meet internationally agreed software standards. This type of government move towards standardisation is in line with pressure being applied for increased standardisation in the

ment emphasised that lack of

# user freedom

departments to make the

The EEC working group is studying ways in which the combined purchasing power of governments can create some kind of order from the chaos of current computer system

government hundreds of milons of dollars. On her recent visit to London, Captain Grace Hopper stressed that it was the intention of the US Navy and other government

> meeting of standards obligatory And the US National Bureau of Standards is working on a definition of an I/O interface standard with a view to making t mandatory on all computer

blds for government contracts. Although it would take some time for European governments to agree to any common standard, there is increasing ressure from commercial users for improved portability of peripherals and software.

Speaking last week at the ICL JA convention in Eastbourne (see pages 2 and 11), the

Howard Wrigley urged the financial backing to user groups which have objectives wider than purely parochial manufacturer-dependent issues. He pointed out that the EEC funded the inaugural meeting o

Turn to page 14

#### June boost for Series 1

ENHANCEMENTS to the IBM Series I mini are scheduled for June, Including CPUs with up to 128K-word main memories, and n floppy-disc magazine system similar to that just introduced on System 34. A 64 Megabyte hard disc and a 370 channel adaptor are also said to be on the

# VANGUARD 7600

THE MINI-MAINFRAME

Semaphore Computer Systems

Expandable to 2 Megabytes memory 9600 Megabyte on-line disc storage capacity Powerful multi-tasking background and real-time foreground op. systems

TOTAL Database management HASP/RJE COBOL RPG II FORTRANIV BASIC CORAL 66 Available for OEMs as well as end users.

Tuvey : VeyUT TUVEY

Semaphore Computer Systems Limited

Business induse computer road popularities surface.

comes to London in computer performance evalu-

This field is primarily con-

last week by Scott Yasler,

rent conference, ECOMA-5, was preceded by meetings in Swit-zerland and Germany and will

research into and applications of tools for data centre management. Holt presented a management-oriented seminar

for new data processing appli cations and hardware configurations. It encompasses techni-

ques of hardware and software measurement, simulation, and an independent, non profitmaking association of users, and its primary activity is a twiceyearly conference for the exchange of information. The cur-

Zurich.

cerned with increasing the performance of existing computer installations, as well as planning

Founded in 1976, ECOMA is'

be followed by a second con-ference in London, ECOMA-6, to be held in October. One of the highlights of ECOMA-5 was a seminar by John Holt of Boeing Computer Services. Well known for his

on the practical application of the BCS automatic control sys-

main processor. It produces both

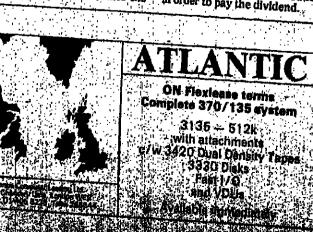
historical performance analyses and real time colour graphic displays, Most hardware monitors are which must be connected by the user to appropriate pins on the back of the console. Many measurements

can be taken directly from such "probe points", for example CPU idle time or channel busy . One aspect of ECOMA's work is to identify these probe points in conjunction with the

Further information on ECOMA is available from the president, Scott N. Yasler, c/o Union Bank of Switzerland, Bahnhofstrasse 45, CH-8021

Pertec counter-suit

FOLLOWING the decision by Tally to sue Pertec for alleged improper solicitation of Tally shareholders while attempting to gain control of Tally (CW March 30), Periec is to bring a counter-suit which alleges that Tally directors declared a 10 Tally directors declared a 10 per Also well received was the first-demonstration in Europe of Univac's Benchmark Monitor Display (BMD). The BMD, available on Univac 1100s, is a hardware monitor built into the in order to pay the dividend.



# lined up for

The competition, organised by John Goldsmith (Computer Ser vices) Ltd with the support of Computer Weekly, has attracted

The final will be in late Sep-

"The artiful new money by around 12's unlinear," he will. council this week, ECSA also suggests that the council should call a meeting of all interested countries to establish a adding that recent Dol state ments had midn ated that & standing committee to lay the might mercase the 'nest' foundation for the establishmoney portion. ment of an international con-"Between Child on the vention of basic standards and

데롤

COMPUTER &

MANAGEMENT

**EDUCATION SERVICES** 

(Software) Ltd 75-76 Little Britain

London EC1

Tel. 01-600 0711 ONE OF THE

MOST PROGRESSIVE

SOFTWARE HOUSES

More funds

likely for

Dol micro

If IS likely to be at feast two months before the Department

of Industry's support scheme for

the nucroelectronics industry in

the UK becomes a reality, and

there is informed speculation

that the money involved could

fronic Components Sector Wor-

king Party of NEDO has yet to

finish its deliberations, and pro-

duce a first draft of its report to

the Department One possible

sticking point seems to be the

amount of money suggested by

Some pressure is building up

from within the inch try to in-

crease the fmaneral support For

example, Alan Shepherd,

managing director of Lerrant

Electronic Components Divi

sion, pointed out that although),

figure of £80 million had been

proposited, multiply this was from

already on georg government

the Dol (CW, January 19).

It is understood that the Flee-

be considerably increased.

policy

my feeting the sail. It is male extend that the De-Partitions is proported to be they lible on the amount of junding and accepts that some marginal therease user the original same may well be sequered was

Japanese deal AN agreement on "knowledge exchange" is likely to be signed soon between ICL and a. Japanese company. ICL managing director, Dr Chris Wilson, emphasises that the agreement does not involve product or marketing arrange-Council probe AN inquiry is being held into allegations that ICL paid for two Lecus Councillors and their DECWRITER III wives to go to South Africa last month. The two councillors

> (Friday) by Clir Erwin Bellow, leader of the council, Tesdata sued

THE performance evaluation would be an "umbrella systems manufacturer, Tesdata BAT buys NCR lis being sued by one of its competitors. Comten over resdata's alleged infringement of two division for £1

will be seen again tomorrow

Still in the running A MAJOR ICL user, Unigate Foods, is currently evaluating IBM and Univac machines as possible replacements for its two ICL 1904A systems at though ICL is still in the running with a .2900 system.

Security service planned by

worth of Harris 8170 terminal THE National Computing Centre is considering setting up a computer security service to act as a focal point in providing advice and education on security, and in bringing together users and providers of

Sécurity systems To this end, the NCC is carrying out a survey of possible suppliers and users to see what the demand is for such a service. As currently proposed, the service would comprise a news-

letter, reporting on conferences, legislation, books: published, cases of security breaches, etc; packaged training courses; publications and papers; a code of practice for advice and consultancy; conferences and workshops; information, in the form of indexes of were interviewed last week, and suppliers and products, and

> In setting up this service, the NCC emphasises that it would not be going into competition with existing consultancies; this would be an "umbrella organ-

division for £153m

HE Appleton Papers division of NCR in the US is to be sold to British Regerican Pobacco for British Asperican Pobacco for £153 million, Appleton Papers main husiness be carbonless paper, and the acquisition will complement BAT's Wiggins Tespe subsidiary which is pre-cluded from the US by agree mants with Appleton. increase users' awareness of the need for security and what options are open to them; to encourage the provision of products and services for security; and to establish standards.

level that we would recom-ment", asid the union official. "We think the Post Office has

been very alow in introducing new equipment. An exception has been the viewdata service,

where the introduction process

has been shortened by a whole

putting new equipment on trial is basically sound."

Leighton Davies, head of Racal Data communications

commented, "We have sold very little to the Post Office in the past

nine years. The Post Office has in

a way been a competitor of ours, and a relaxation which allowed us

on to the switched network would help substantially."

"But the Post Office method of

As part of its "testing the water" the NCC is talking to the Insurance and security industries, and to the Computer Services Association. Alan Benjamin, director-

general of the CSA, told Computer Weekly that he thought such an organisation was needed, but could not say . A recent report by the US whether the form as at present conceived would be acceptable.

government's auditing depart-

# OUR 600th ISSUE

JOB OPPORTUNITIES -PAGES 17-47

MARCOL

HAS CONSIDERABLE EXPERIENCE IN

## **Message Switching** Communications Computer Aided Design

Our product teams have been involved extensively in all the above areas, both in development and implementation, mainly using PDP 11 equipment.

For further information contact: R. Hoare Esq. Marcol Computer Services Ltd., 60 Queens Gardens, London, W.2. Telephone: 01-402 9355

page). that the objective of this association should be to this asserted help maximise the protect and our employers' investment in computing - and not ment in our relationships with just on our relationships with ICL." he told the Eastbourne

convention.
Taking this wider view - that ICL will one day cease to be the centre of the association's uni. centre of the association's universe-13 a of user associations, the nature date have been almost which to concerned with the important but parochial conimportant their manufacturer-

dependent relationships.
dependent relationships.
it is a view that is still perhaps It is a view ahead of its time, yet some years whead of fundamental one which is of fundamental

# COMPUTER WEEKLY

Vol. 24 No. 600

Deputy Editor
Tony Higgins 01-281 8698 , Миладег: 01-261 8359 Advertisement Harry Hutson

Class Ad Manager: Brian, Durrant 01-261 8028 sel House Iden, BE1 SLU. sphore: 01-251 8000 sphore: 7eles: 25137 815PRS G

icer: Stathem House, Taibol Road Manchester M32 Telephone 061. Manchester: Manchester MJ2
Sister MJ2
Sister

revise Press Lid 1970
Linconnect Press Lid 1970
Linconnect Weekly is sent free of charge to the computer Weekly is sent free of charge to this wife, and the ontologing categories in the UK and the ontologing displayed services a reculting, and wents responsible for computing, and wents responsible for computing, and magnitude for the computing of the computers and participated for the computers and participated for the computer selection, field engineers services. Computer selection, field engineers services. an a 17s is A d.h. in assessment, field confusers operators, companies assessment, field suggested of controded circulation populations, inc. Suc. 18st Alberta inition), i.d. 40 he with reas Frest (Saiss Alberta inition), i.d. 40 he with reas Frest (Saiss Alberta Calcide the September (or 18st Calcide and Saiss), including the control of the Saisser (or 18st Calcide and Saisser (or 18st Cal

posities.
Computer Weskly has a pirculation eac.
Computer Weskly has a pirculation eac.
Wesk of over \$2,000 including the highwest fully requested circulation in the UK.
The international addition, which is

ISSN 0010-4787

Phone for samples now

SAME DAY DELIVERY!

LONDON AND THE HOME COUNTIES

80 column punchcards and new print-out

LOWEST POSSIBLE PRICES

DIRECT WHOLESALE, 01-960 1000

Or write: D. W. LTD.

98 Wakeman Road, London, NW10

benson...

RAWING AHEAD OF THE OTHERS

# Users must reach for the stars

significance to the whole future of the changing nature of the

manufacturer/user relationship. The most important party in this relationship should be what is so often called "the end user", ut should be seen as the starting point of all computer sys-

"end user" wants stability, ease of use, portability, reliability, flexibility, in fact, all the facilities that make the computer system manufacturerindependent and user-

As Dr Wrigley so rightly pointed out, this means that users should be concerned with

THE forthcoming confrontation

other bodies in the computing universe that can exert real pressure on developing national and international standards which will promote the needs of the DP department's users bodies such as the UK's National Committee on Computer Networks and Data Protection Committee, or the EEC's Conference of European Computer Users.

The potential power of the EEC in these areas is graphically illustrated by its plans for insisting on standardisation in systems entered for public sector tenders (see front page). Dr Wrigley is not alone in

perceiving the importance of these supra-manufacturer user groups, and has the active support of other user groups which are now beginning to work so effectively through the National

Computer Users' Forum. But to the average user, who is inevitably more concerned with the weeds in his own back gar-. den, this group must still seem to be involved in some form of noble but obscure space explo-

While in no way suggesting that user groups should couse to press their existing manufacturers for better terms, Comouterview believes that Dr Wrigley has pinpointed clearly the major issues for the future and should be given the fullest possible support, not only from the ICL CUA, but also from all other sectors of the computer

# between operations and management, organised by Computer Weekly and the Data Processing Weekly and the Data

Computer Weekly and the Data
Processing Management
Association, could well be the
event of the season. It could also
be the start of a fresh and

Confrontation
The inc much-needed drive towards ment, many DPMs have gradubetter understanding.

The meeting, which takes place on May 17 at the Control Data Institute 1 and on blak off ated through the Operations department. They know only too' tion of the trade unions. Pay Data Institute, London, kick off well the snags and frustrations of the job. They also appreciate those of Ops — and there is no of the job. They also appreciate those of Ops — and there is no lack of opportunities. If the in-

mencement, the operators present will call for a coffee break. Should the session proceed of the installation and company, beyond the appointed timescale, special the appointed timescale, special attendance rates will operating hand in. It is his prime responsibility to maintain DP operations at all times. It must Overriding the session should obthe question of responsibility: the manager's responsibility towards his personnel and in particular the Control of the manager's response to the control of the control be admitted that this task is becoming increasingly difficult, especially in the face of trade particular the Ops team's responsibility and loyalty towards their employed their employed their employed to their employed to their employed towards their employed their employed towards their employed their emplo union blandishments towards

their employers.

DP managers are finding themselves at a loss in their relationships with the installation Obs tasm. No longer is the pressed an interest in recruiting the comtion Ops team. No longer is the theme "What is good for the installation is good for all." An added classes where to be installed. added clause now has to be included. Hause now has to be included. cluded: "Particularly the operators." No matter how many DPM. "Board made by the commentation of the comme

allowances are made by the DPM, more are tabled immediately. Special handling paid for multi-part printer runs. From DP management's point of view, the present aggro is all the manufacturing and operating sides. The industry can't say it as hasn't been warned. Computer view has repeatedly drawn attention to the challenge of the trade unions. Unfortunately, of view the present aggro is all one-sided. Unlike operators few of whom have experienced the responsibilities of DP manage-

aon 0 COMPUTER WEEKLY

MAY 9, 1968 TAKING their first steps away from penched cards into key to mag tape data preparation. BM and hotely well introduced the Model BO data introduced the Keytapa device respectively. Baca-Milgo's new bighapaed modern allowest transmission at up to 4,800 baids. The worldwide success of Honey wall's Series 200 had led to specification in production at the Newholips. Scotland, factory to three times that of 1 see. Franklin National Bank of New York was helping the brain drain of 53,757 for programmers with printy six months, experients.

6.00 will, according to Bernard Allen, CW's resident Op Spot presenter, have a flexible format. It will need to have No Present-day DPM's, if not thousand the fact that the computer exists for the benefit of the company, and few seemed convinced, then at least we are entitled to a craft at least we are entitled to a craft union of our own. Lumping us in with a collection of Amalgamated Engineers or Scientific Workers, hardly seems appro-priate. Meanwhile, next week's Ops v Management meeting should be interesting.

## INTERRUPT

IT was really quite a straight. forward job, so the programmer had no qualms about leaving i to be run overnight. He had been informed that a certain disc volume had some flaws on it, so had decided to dump all the data files to magnetic tape, re-initial-ise the volume and reload the data. This, of course, was exiremely easy as the reload program did. all the complicated work of redefining the file areas and characteristics.

It was about 2.30am when the operator realised that all was not well. The reload program would only reload half the Volume before stopping, and it became apparent, on careful checking, that the dump program had discovered the flawed areas and written comments dated. areas and written corrupt details for these areas. However, by now the volume had already been re-initialised, thus clearing it of all previous data. Slowly realisation dawned that this volume was not the one required every six months for periodic stocktaking but the was a vital component of the communications systems which had to be brought online by had to be brought online by 7.30am. This was an example of Murphy's Law! Which says that the worst will always happen. About this time beople began to panic, especially when it dump copies of the volume had these corrupt details as well. Eventually, after some quick the computer industry, the data was recovered and the computer industry, the data munications system or only the computer industry, the data was recovered and the computer industry, the data munications system or only the computer industry. munications system brought online, late but in one piece. The moral, Do everything in each step before going or to the something hasty. In case you've trodden in this week, as a less than the something hasty.

# Plea for users to look beyond manufacturers

THE ICI. Computer Dscis' And he added that it is Association should cease to regard ICI, as the "centre of its demise of manufactions". other bodies, such as the FFC, to protect and help maximise the return on their employers' investment in computing.

That was the way in which ICL CUA chairman, Dr. Howard Wrigley, summed up he, view on whether the association should become financially independent of ICL.

Dr Wrigley, speaking at the Eastbourne convention, propounded on what he called a "revolution in attitudes."

"It is my view that in the future ICL will cease to be the centre of the universe as far as this association is concerned." he said, "ICL is our sun. It is out of ICL that we have been created and ICL has nurtured us for many years.

"But there are other bodies in maximise the return on a ur universe and though then influence may seem slight at present, it will increase until their combined effect may well outweigh that of ICL," he added



Dr Wrigley emphasised that it was vital, for example, that net works should be manufacturer independent, and it was import ant that the views of users were presented strongly and coherently to national and in ternational bodies such as the UK's National Committee on contputer Networks, which is trying to establish networking standards (see back page).

There seems to be a general recognition that users' and manufacturers' interests have an increasing tendency to diverge while the interests of users of different manufacturers increasingly converge," he said

dependent user groups replaced by new supers associations, because in the and Germany there already embryome organisations w are a "sort of cross between National Computing Centra

the Consumers' Association Dr Wrigley emphasised a he believes that one of them important tasks for the assor tion is to determine its obje tives and its method of schieving those objective "Contrary to what some permay think, I do not regard tmaneral dependency of the CUA on ICL as the single max important issue facing its association," he said.

He said he believed that to objective of the association should be "to protect and by employers' investment in or putting " In this wider conta he could see the "potential h conflict of interest between users and ICL where our ability to act independent would be a disadvantage to a members "

appointed to the Racal Elec-He also stressed their trasmy interest shows? Racal Data Communications governments and the EEC: takes in the company's two US acquisitions in the field, Milgo Seeking to involve usersboth Corp of Miami, Florida and the formulation and impleme fation of policies relating tod Vadic of Sunnyvale, California development of computing.

The participation which The group employs 2,000

invite through associations as ours is based on the facty ore users and our ICL conf tion is largely irrelevant. them," he pointed out. For the unmediate future?

Wrighey recommended that structure of the ICL CUAskel from an basic ally the same, at association of user groups will Tellerts the fact that the prise teason for our existence it & allow users to collectively at and react with ICL."

But, to take account of his longer term view that the association abould look beyond ICL, he believed there should be an increase in the number of study groups and working parties. These would study issuet. specific to ICL equipment, such as serviceability, but would be increasingly involved in considering mutiers referred from outsale organisations.



# ICL and Racal ask for micro money

for a share of the money the Department of Industry is planning to invest in the UK microelectronics industry for their own in-house development

ICL has a microelectronics factory at West Gorton, and Racal has one at Reading. In each case the plants are developing specialised high technology chips for use in forthcoming products and each has a small-scale manufacturing

Speaking in London last week. Racal chairman Ernest Harrison said the company was investing £1.5 million in the Advanced Development micro division.

IN a bid to get a 50% increase to

communications business this

year, Racal Electronics has

formed a new group, Racal Data

Chief executive of the new

group is D. Leighton Davies,

managing director of Racal-Milgo Ltd, who has also been

Communications.

"The government should allo-cute money to companies which intend to become a major manufacturer of standard are in microelectronics as a semiconductor components but business, but should also support capital goods manufacurers like Racal which have set up plants for their own special needs," he said.

needed to be able to do its own

Dol proposals, set out in its

report to the Nedo components

sector working party, originally

said that in-house facilities

would not get support unless there was a link with one of the

UK semiconductor manufac-

The emphasis at the Depart-

ment was, however, being

changed and extended beyond

component manufacture in

isolation towards a more flexible

approach that would include

in the Management Today table

customised LSI designs.

turers (CW, January 19).

Dr Chris Wilson, managing director of ICL, echoed the call. Last week he emphasised that it was essential for companies like ICL to have a semiconductor capability of their own in order fully to understand microeleconics and said that ICL was "talking closely" with the Department of Industry.

"We would like a slice of the LSI support money," he said, LSI support money," he said, support for applications work adding that the company did not (CW, February 16).

Datacoms group formed £75 million in its worldwide data

1978 did over £50 million of Harrison underlined the importbusiness, representing about ance of profits which have taken 25% of the Racal Electronics the company to the top position Harrison stated that Racalof most profitable UK companies.

Milgo's entry into the European data terminal market two years ago was a disaster. "But we learned from the mistake, and we now have a better product at a better price in the US, and will re-enter the European market in September," he said, confirming a Computer Weekly report last year (January 20, 1977).

Reporting the 23rd consecutive year of record output and record profits - over £45 million people and in the year to March in the year to last March

#### Three new terminals from IBM THREE communications ter- used for local input and output.

minals introduced by IBM extend the capability of remote job entry terminals using Systems Network Architecture. The terminals are the 3776 Models 3 and and the 3777 Model 3.

The terminal operator can control up to six concurrent jobs by multi-leaving via SNA mul-

available for data transmission. A magnetic tape unit and £70,400. controller can be linked to the

The units can be used for message spooling and operator prompting via the standard console display.

A representative configuration of the 3776/3 includes a printer, card reader and a disk ette unit and sells for about £28,600. A similar Model 4 contiple logical operation. This allows online jobs to be initiated 3777/3 with a magnetic tape at any time an SNA session is unit, line printer, card reader and diskette is priced at about

The 3776/3 is a 300 ipm unit. terminals and assigned to an independent SNA session, or and the 3777/3 1,200 lpm.

#### Multiple sclerosis warning aid EARLY diagnosis of multiple by some stimulus, such as in this

Digital Equipment GT46 system at the National Hospital for Nervous Diseases in London. The GT46, a laboratory system based on a PDP-II/40, averages visual evoked responses from patients, abnormalities in which can be an early indication of rultipie scierosis.

Evoked responses are tiny variations in the electrical signals picked up by electrodes on the scalp — variations caused

sclerosis is being aided by a case the sudden movement of a checkerboard pattern held in front of the eyes.

To climinate noise, the stimulus is repeated 256 times, and the signals from all these samples are averaged together by the computer, after being

The end result is a wave form covering a period of 256 milliseconds after the onset of the stimulus; this wave form is displayed on a screen.

# **MACS** presentation next month

Motorola Semiconductors of Austin, Texas production centre, at Microforum, a one-day MACS, the Motorola Advance Computer System, is likely to be given at a one-day forum the company is planning

tre, at Microforum, a one-day seminar to be held on June 19 at the institute of Electrical Engineers in London.

It is to be part of a programme of presentations by Colin Crook, director of MPU Operations, and Gary Daniels, director of MPU Design from the Company's understood to contain such features as 32-bit registers. MACS (CW, December 1

## Sperry Rand record year

THE year to March 30 was a standing at \$1,071 million, up record one for Sperry Rand 19.4%. Profits were up even Corp. parent of Univac. The more, 24.6% at \$60 million. company's net profit was up 12.6% at \$177 million on turnover up 11.6% at \$3,649 million. Turnover for the JanuaryMarch quarter exceeded \$1,000 million for the first time, 18% over the figures for 1876-77.

COMPUTER WEEKLY, May 11, 1978 I WAY

YES, the gentieman in our picture is wearing a kilt. He is Dr Michael MacDonald, secretary of the Scottish Tartan Society and curator of the Museum of Scottish Tartans in Perthehire. The museum holds an archive of Highland dress and tartans, and is now using an Olivetti TES 501 word trying to trace their Scottish ancestry and discover which tartan they are entitled to wear.

Apart from being used to match any one of 10,000 different clan names with any one of 1,200 tartans, the Olivetti system can also identify a particular plaid if the numbers of strands of each from people all over the world

using an Olivetti TES 501 word if the numbers of strands of each processor to help answer the colourare keyed in. In some cases it can even give the location of the loom used to make the plaid.

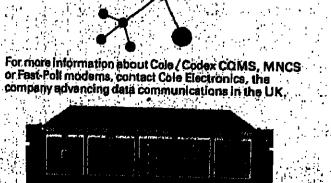
Computer power

PARENTS are now beginning to choose their child's school depending on whether the school has its own computing power. Discerning parents were choosing schools with com-

This trend was noted at the latest meeting of the Microcomputer Users in Secondary Education held in Nottingham Nearly 80 delegates listened to a review of the latest microcomputers from John Coll of Oundle School, Peterborough. Colin Wells of Down School, Kent outlined his experience with a micro within a secondary modern, and Bob Eadle, from Bedford School examined the benefits of floppy-disc based microsystems.

While money for educational purposes is notoriously lacking delegates pointed out that certain schools are given an allowance for telephone charges between their own terminals and a central mainframe. This allowance could amount to £500 and represented a large proportion of the outlay needed for a microsystem

# COLE/CODEX BELIEVE ALTESTING "Tear Control" 'Yet another buzz worthin the data communications makinger's vocabular? Maybe, but in these difficult times of staff." Tecruitment problems, it takes on a new meaning. meaning. . . the still y of one person or group to successfully maintended at a communication links and to diagnose the sults as they occur. The Cole / Codex Circuit Quality Monitoring System (COMS) gives data communication users. the ability to monitor, test and diagnose high speed data network performance without interrupting data network performance without Interrupting data transmission. COMS has a whole host of features including: the monitoring and storing line condition displays, eye patterns and embracements; a built-in synchronous and experiments. eter. COMS is ideal for all types of cuit testing. However, for high speed multipoint circuits the Cole / Codex Multipoint Network Gentrol System (MNCS) reigns supreme. This unit allows users to carry out remote tests, perform control inctions, again without interrupting data flow, and to re-configure Codex LSI Fast-Political flowers distributed in a multipoint net you. MNCS features include: programmable system restoral; local and remote streaming detection.



**的现在分词 医血血管 医** 

Croydan, CRO 28N Telephone: 01-888 6622 Telex-846847

hith Sales Office Dublin: 0001 680986

The contract was the second

#### **EDITED BY PETER HEWITT**

# MICHIE'S PRIVATEVIEW Robot workshop of the world?

committee on automated small batch production has concluded that the UK lags our major industrial competitors by about 10 years. This was revealed at a meeting on robotics sponsored by the department's National Engineering Laboratory. The meeting was both thrilling and deeply depressing.

Internationally minded enthusiasts for new technology were given a feast of new marvels from the R&D laboratories of Volkswagen, Renault, Fiat and Unimation. The latter's current experiment is with two-armed assembly of an enlire car transmission system.

The meeting also listened with disbelief — and for those patriotically inclined - with horror to evidence of the miserable neglect of robotics R&D in the UK.

It is now argued by some that R&D would come too late. An initial headlong scrumble is now needed if seeds of the new

This concept of a rough tegrain robot has been created by Mike Larcombe at Warwick University under the Science Research Council's mobile robot project.

industry are to be planted in UK soil. Such a scramble has to start with importing and copying. Only when a viable domestic technology has been thus established can we be in

any position to understand and exploit the fruits of new

My own inclination is to draw a sharp distinction between robots for British robot manufacture as a British industry. In the second I perceive the real chances - based on selling where the market really is, This means looking on the huge manufacturing industries of our competitors in Japan, West Germany, and the

US, as prime customers. So long as the annual rate of investment in new plant and equipment runs at about one half that of the main competitor nations, our factories cannot afford even to assimilate the inventions of the past, let alone take up revolutionary

hardware at the start.

Software is another matter.

Here capital costs and heavy

engineering capacity are not

the constraints. The industrial

For the time being, then, the priority must be just to Could the UK become the scramble, importing and obot workshop of the world? copying finished technology. the immediate future, glants like Unimation will be hard to Fundamental robotics should be done, but geared towards beat. In the "hand-eye" game anyway, even research will the post-scramble 1980's. There are ways, particularly need to import the engineering

"computer vision", in which such work could blend well with a well-planned "expert systems" programme. My hunch is that the inceting point vill come with autonomous

dumb robots off the shelf.

their make-up?

But which country's R&D

Not only computer scientists

will be first to put real smart

ness and learning ability into

but many others perceive in

wartime style, cutting red tape.

have been discussed. Some

years ago I myself attempted

project" of this kind, but the

climate of official opinion was

mount a robotics "crash

the foreign robotics build up exploratory vehicles which omething of an emergency require to exercise some scien R&D projects conducted in the

tiffe expertise Tet Propulsion Laboratory Mars Rover vehicle is the supreme example. Due to be operational in the mid-1980's, vill perform on Mars many of sorts of measurement which human astronauts di on the moon.

Many of the knowledge representational issues can't studied with quite theap laboratory rigs. Shown here is Mike Larcombe's drawing of Mr Bill, the mobile robot hel developing at Warwick Unlversity which made its debutat a Royal Society soirée.

Honald I belie

#### gineering package Asas has for Prime engineering users. The the first time been implemented system already supports the on a minicomputer, a 256K Genesys and Pafec packages for Prime 400. The package deve-lopers, Atkins Research and De-like Asas, offering finite element velopment, have also adapted capabilities. Atkins has now concluded the software for a greater range of Digital Equipment models, including the DECsystem 2020.

**SOFTWARE FILE** 

Asas implemented on

THE popular structural en- the range of options open to

Prime minicomputer

an agreement under which Honeywell customers requiring The system, in its latest a structural analysis package release, Version G. was con- will be referred to Atkins (CW March 17, 1977). The company is verted for use on an in-house Prime 400 by consulting engineers Rendel, Palmer and Tritton, ways in which Honeywell cuseers Rendel, Palmer and Tritton, tomers could be serviced. who quote an eight man-week

#### Sydney office

The version produced, which will be marketed by Atkins, is used by Rendel, Palmer and AN office in Sydney, Australia, has been opened by London Tritton in conjunction with its own graphics software. Howsystems house Hoskyns. While ever Atkins says that the the eventual aim is to provide a standard Asas display system, ASDS, based on Gino-F, may be full range of services as in the UK operation, initial efforts will incorporated for future be concentrated on marketing oftware packages, particularly The DECsystem 2020 the company's well-established Modular Applications Systems implementation was demonstrated by Digital Equipment at this year's Hanover Fair. Atkins

TP applications is frequently lengthy, tedious, and error-

prone. As a result, most TP

program for automatic finite element calculation has been introduced by Computerline Bureau Services on Plessey's ICL 1906S at Weybridge, Su rey. Pafec 75 makes the preparation of input data more atraightforward and offers the user anhanced run-time control and modelling facilities. Module names may be ab-

brevisted to four letters and the analysis program can be run in parts, with facilities for off-lining, extending, and altering each section. Parac 75 also simpliftes the process of error correction and allows the user to

Both Pafec 70+ and Pafec 79 are used internally by Plessey, the former being the company standard for finite element cal-culations. Originally written at Nottingham University, both packages are marketed by Pafec Ltd, a company formed specially for this purpose, and are offered by Computerline under licence.

User develops Shadow II mapping aid

option, Online Mapping, is

available for a basic price of

# More control Apollo offered as theme of Pafec update A NEW version of the Pafec Transport for pure page to the Pafec pack A NEW version of the Pafec pack A NEW version of

as part of its automatic scheduling system. The Scheduler, is being offered in the UK and Europe as a stand-alone pack-

age.
The subsystem, Apollo, provides OS users with online facilities for submitting JCL. As with other Value products for operations management, it will be marketed by RTZ Computer Services.

When used with The Scheduler, the Apollo subsystem retrieves JCL automatically from a production JCL library according to the schedule de-fined in the work-load control file. JCL is then submitted automatically to the operating system queues in schedule

However, the system also

source books and control infor-

mation required by Shadow

of users have over the years

produced similar software.

usually tailored to specific in-

stallation requirements. Be-

cause the products catered only

for limited subsets of Shadow

facilities, it was unable to adopt

Shadow-Mapgen can be

rented for £25 per month and

purchase outright, Adrem Systems and Programming, which

Altergo reports that a number

application programs.

facilities for temporary overrides, such as date card changes or changes in parameters.

It is these facilities which changes made. Another useful comprise the stand-alone package. Constituting a card-less front end, the system allows an operator to select, modify, and submit JCL and control cards without leaving the console.

Jobs submitted can, if required, be completed automatically; more generally, they are entered to the Haso or other queue under Hold, so that sub-

Besides allowing central cor trol of JCL, the system also offers the advantage of automatic audit trial of all JCL

feature is the ability to display procedure libraries online. Apollo interfaces with a standard Partitioned Data Set of with a JCL master library held by the Librarian, Panyalet, or any other source library system It runs under MFT, OS/VS1,

OS/VS2, and MVS, supporting

## Foresight enhancements

ENHANCEMENTS in the latest for reports to 30,000. release of Foresight, Version VI, are designed principally to extend the program's capacity and accelerate its calculation facilties. Foresight, a financial planning and reporting system, is owned by United Computing Systems Inc. and is available from LUCS either as an interactive bureau service or as a pack-

age for in-house use. Version VI extends the number of reporting periods from 30 to a maximum of 100, the number of operators and operands per line from 10 to 100, and the total matrix positions

Another enhancement is the

African 'first'

A COMPUTER services com

# PROGRAMMER NOTES

# Two winners in Fortran competition

competition have now been judged by Dr I. D. Hill, who laid ANSI 1966 standard.

great care, noting even the least — tion, and 17 that did not. Algol and Fortran algorithms, computing and statistics diviion of the Clinical Research Centre - maintains he enjoys the work. Programmer Notes offers thanks for all his hard effort. His report follows. . . .

were 43 entries altogether. The variability in size of entry was enormous. ranging from a postcard at one end of the scale to 40 pages of

computer output at the other. Seventeen of them could be rejected at once, either for obviously failing to do the right job or for violations of the 1966 Fortran Standard. Some of the violations were serious: mixed mode (integer and double pract-sion) expressions; declaring DOUBLE PRECISION DINT

on the second line in addition to DOUBLE PRECISION FUNCTION DINT (VALUE)

on the first, a loop expressed as so on. A few were merely forgetful, such as omitting the END line; white seven fell into the trap of including non-Portran characters (: '& ") in

Whather the Standard inended to disallow this may be doubtful, but the wording is ab-solutely clear that it is disallowed, and the competition was clear in requiring the provisions

The remaining 26 were a examined in detail. They could that a simple solution could be He examined each entry with found by using the DMOD func

> AMOR) there, but not DMOD; best external functions One anthor wrote "I did look

matable DINT without the us of DMOD; and I shuddered!" So did I when I first met the

my suggesting it as a competi-tion. Some entries caused the shuddering to increase, while 4. few showed that something neut is possible. The best of these is shown in Figure 1.

The operations called for b)
this (assuming that the compile
does not recognise the argument
1. ODO as a special case) are, d
course, quite fudicrous consisting of: I. Divide DARG by 1; 2.
Take the integer part (which we
eventually want); 3. Multiply by
1; 4. Subtract from the original DARG (to get the fractional part): and 5. Subtract from the original DARG (to get the integer part again).

Only two competitors submitted this solution in the nest statement function, form and £10 prize is awarded to W. J. Henry of Belfast and to Peta Childs of East Tilbury.

DOUBLE PRECISION FUNCTION DINT (DARG)

COURLE PRECISION DARG, DA, DB

CINT = 0.00C

DA=DABS(DARG)

DEL DBLE(AINT (SMGL(DA)))

DINT = DINT + DB

DANDA-DB

IF(DA SE 1.0DD) GO TO 10

DINT = DSIGN(DINT, DARG)

RETURN

leure I

DOUBLE PRECISION DINT, DARG DINT(DARG) = DARG - DMOD(DARG, 1:000)

#### monitors now provide methods widely installed in UK bureaux. It has previously been run only of online screen formatting on large systems, including Uniwhich generate appropriate vac 1100, DECsystem 10 and maps and control information Such features can make pos-Its implementation on the

conversion effort.

implementations.

VAX processor.

has also run the software suc-

cessfully on a 2050 machine and

has been asked by DEC to con-

sider an implementation for the

Asas, which received NCC

CHRISTCHURCH

**NEW OFFICES IDEAL FOR** 

STRATEGIC LOCATION

**ECONOMIC BUILDING** 

AIR CONDITIONING

PRIVATE CAR PARK

For further details apply to:

Healey & Baker

Existished 1920 in Landon 29 St. George Street, Hanover Squere, London W1 A 3BQ 01-629 9292

**CLOSE TO M27** 

**COMPUTER ORGANISATION** 

NR. BOURNEMOUTH

15,200 sq. ft.

support under the Software Products Scheme, has been

down the objective of writing a at once be divided into two DINT function using the strict categories nine that realized

divergence from the ANSI Some competitors may have standard. Well known for his examined the table of intrinst refereeing work for the BCS on tune trops, found MOD and appropriate the standard of the standa Dr Hill - who works for the a meluded however, among the

at the problem of defining a full

problem, which is what led to

This cannot really competed though, with the use of DMOD, particularly if expressed as a statement function, rather than an external function (see Figure

44/54 Old Christeflurch Road `elephone; (0202) 24242

> 37/43 St. Peter's Road Bournemouth BH1 2JR 1 Telephone: (0202) 23491

Substantial software packages, they are in general offered as Passed to the Shadow mapchargeable options. For ping support macros, these example, the relevant Shadow II statements in turn create the

A programming aid has now been introduced which offers Prime equipment further widens sible considerable savings in Shadow II users a new alternative to hand-coding MAPD assembler statements. Developed by a Shadow user, as was Online Mapping (CW, April 22, 1976), the product, Shadow-Mapgen, is being marketed by

Adrem Systems and Programming Ltd. Shadow-Mapgen is a batch may also be available for mode pre-processor which accepts twenty-four 80-column cards representing the 3270 expects shortly to introduce

screen format and contents. further, more general, software From the position and characteristics identified for each field, the program generates appro-

## Clearing the air on structured programming

A MAJOR cause of confusion over structured programming is curious blend of the old and the new. A definitive new publica-tion\* by the NCC should help many to achieve a better understanding in this jargon-rich field. The book, Program Design Methods, was originally prepared in 1976 as an internal report for NCC staff and members. It has now been

eprinted for the general public. The book begins with a cogent review of the background. carefully establishing the historical and practical context of the new methods, then leads to a linking chapter on the principles of program design.

Subsequent chapters examine the implications for coding — "structured coding" — and for program development. Two approaches are then outlined — IBM's Improved Programming Technologies, IPT, and the

dichael Jackson design method. The book concludes with a discussion of program design languages, computer-based de sign systems, and documenta-

Complete and concise, the survey will provide for many a very useful introduction to the concepts, techniques, and terminology of structured programming. Particularly valuable is the emphasis throughout on relating the new methods to

Other attractive features are a position and the inclusion of carefully chosen examples and illustrations. Although at pains to introduce and describe new terms where appropriate, such as "structured walk-through," the book annoyingly contains no index.

\*Program Design Methods, by G. B. Bleazard. 104 pp. £3.50. NCC Publications, Oxford Road. Manchester M1 7ED.

#### Puzzler

wizard at Draughts: The other day he bet me 50p that he could hold the draw against 12 Black Kings, using only seven-White un-crowned men.

I could have first move with the Kings, but he would specify the starting position of all 12 pleces on the board. He pro mised that no stalemate situal tion would be involved - White would have moves available at each turn, but Black would be unable to break through the de-

After due thought 1 accepted the wager, and soon lost 50p. See page 45 for the young master's starting position.

provision of an algebraic logic facility. This can apply a relationship to all elements in a line, thus avoiding the necessity for repeated definition of an

pany in Abidian in the Ivory Coast has become the first user in French-speaking Africa for Gael 3, an accounting package sold by Sligos-CPP. The company, La Cierle, will run the software on an IBM 370/135.



## IBM REPLACEMENT — DS377

Plug-to-Plug Compatible with IBM 3277 Model 2

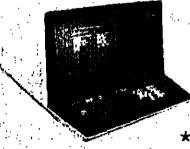
★ Data Entry and Typewriter

Keyboarda avallabis 🛧 Delivery 4 wooks

---THE STATE OF

Price from £1,100

# TELETYPE REPLACEMENT



Prices between

大 Delivery 2-4 weeks

大 Field Protection \* Format 1920 characters ★ Tabulation

\* 15" Screen ★ Cursor Control

大 7 x 8 Dot Mairix

\* Detachable Keyboar

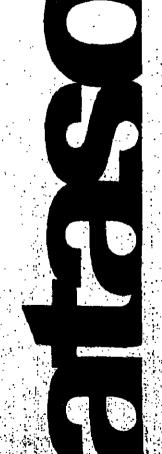
★ 75 to 9600 Baud

\* Numeric Pad \* Address Field X-Y positionin

\* Page/Scroll Modes

Please send details /errange domonstration NAME ..... ADDRESS......

TO: ELBIT DATA SYSTEMS LTD., COPTHALL HOUSE, ST. WES GOAD. MAIDENHEAD, BERKS. Tel: 0628 32312



We were today's biggest British IBM bureau until we became tomorrow's biggest British IBM bureau.

There's a stranger working with our dual IBM 370/158

An Amdahl V5. Britain's first. One of the most powerful computers ever installed by a bureau.

The name's unusual but the action's familiar. Because Datasolve's Amdahl V5 is totally IBM compatible. It's more than doubled our capacity overnight. It brings you reliability of a new order. It puts new power behind our range of on-line services

versatile enough today to give you the control and facts you'll need to manage your business tomorrow. Above all the new Amdahl V5 ensures that the service you've grown to expect from Datasolve in the past, you

such as Remote Job Entry, APL and TSO. Powerful and

can expect, with interest, in the future. The IBM Service from Datasolve growing ahead



**BOC Datasolva Limited** -99 Taites Road Meet Surbury on Thames, Middlesex Telephone: (76) 85566

LYME

S CHERRIE

for details: 01-452 0490

TEL: 01-452 0490





Promodata -

LEASING? BUYING? SELLING?

TEL. 01-493 9577 or 061-439 6931

General Freight

**COURIERS TO THE COMPUTER INDUSTRY** Urgent Documents? Small Spares?

Courier accompanied delivery to or collection from: Europe Middle East, USA and Canada.

DECWRITER III

RUBIDE LTD.

COMPUTER TIME

and Bureau Servicès

Central London

Atháctive Rates

01-836 0355

**NEW DEC** 

modules and memory. Will

take in part exchange or buy

Dec Processors in any con-dition.

Telephone:

S.K. SYSTEMS 0462 35267

paper tape reader punch

ALAN RUSSELL, GENERAL FREIGHT CO. LTD. Telephone: 01-353 7474, Ext. 2670. Telex: 919433

DECWRITER II ...... from £868

Midlectron M-22 ...... from £945

Bruce Cane - Tel: 01-658 5906. Telex: 946123

COMPUTER LISTINGS IND PUNCH CARDS Bost prices paid LEYTON WASTE PAPER

CO. LTD.

Rowin Works, Lynn Road Leytonstone E.11 01-558 2131 Contact: MIKE BOWLES

croates files of any blocksta

any record size any field format with any field contents - - on many mainframes and minis. MAKES THOROUGH PROGRAM TESTING EASIER AND QUICKE Phones water for Special User Guita Offic

COMPUTERS-PERIPHERALS

IN — OUT WE BUY - WE SELL HARD CASH-

Phone: READING (0734) 7/9 Arther Road, Reading

RECOMPOSITES STRAS

DATA PRICE COMPANIAL DEC RIM OPIQAN
ACOL TELESTE

RUBSTERS OF COLCATORS CONTROL TO TARE REAS OF STRAIN ACOL

CARD CAMBUS STRAIN PROOF SAMES

**DATAWASTE** LTD.

Torona e Salmer ORP 29114 Toctoria e Ltd 54 Tortagel Rd Orrongton Kont BRS 41.0

Still pay the best price scrap computer paper unched cards.

INFORMATION SYSTEMS

**EX-RENTAL 270X TYPE FRONT ENDS** 

Fully inturbished. Can be configured to continue requirement

Parchest unce from C10 000. Routal projection (100 per month. Maintenance and A

CHELSON COMPUTER SERVICES LTD.

FOR FURTHER INFORMATION CONTACT
BI John's Court, Revienciali, Lence 884 /PA Tel Missenigale (0/1062) 28126

FOR SALE

PDP-11, 11/04, 11/34 Discs, Tapes, Printer

Tel. 01-278 5501

01-960 1000

ATTENTION NORTH

WEST D.P. MANAGERS

UNIVACENDE data proprieta april

**PDP II v 03** 

Floppy Disc Systems with software packages for STOCK CONTROL PRODUCTION CONTROL LEDGER **ANALYSIS** 

IMMEDIATE DELIVERY OF NEW

Low cost version of these packages supplied with Intel/Memorex floppy disc system at, prices from £6,000 complete.

data-J

Data-J Ltd.; 7 Churchill Court, Rustington, Sussex Tel: 09062-72902

We have the best Tel.01-402 9355

#### **BURROUGHS L8300 COMPUTER**

complete with 2 cassette stations and controls, line printer, and 12KB of user memory. Installation in full working order being only just over 2 years old, Now to be sold as it is redundant with the introduction of new equipment.

ENQUIRIES TO: A.S. GYNT ASEA LTD. VILLIERS HOUSE 41 STRAND, W.C.2 TEL. 01-930 5411

#### DEPARTMENT OF TRADE ST MARY CRAY

A 18 Key station PCK system (expansible to 20 key stations) producing 1904S compatible tapes (9 track PE 1600 bpl) incorporating local sales February 1979: Ref. CEH/1;

Applications quoting the appropriate reference number to CENTRAL COMPUTER AGENCY
Room \$14, Riverwalk House
187,161 Millbank, London SW1P 4RT



Area Bases Tel.

Alean 71/2% discount by an linguistical):

Area Bases Tel.

Addison 021 490 8666.

Costant CSL221 NV2.

E-Wate Collegen/1822 nr.:

A Learning Hond: A Least Linguistic Addison Bases.

DL 207 17/17

YING-SELLING OF MAINTENANCE Call 02774 58028/9 Commercial Data Ltd

BM DATA PREPARATION EQUIPMENT

Brokerage service for used Computer and Pariphera

FOR ADVICE ON

#### SERVICED OFFICE

Rent from £35 p.w. inclusive of: Rates, Light, Air Conditioning, Cleaning, Tel. Rental. Reception and Answer Service.

INFORMATION

01-242 9283 Time and People Limited

Contact Hugh Benham

**EQUIPMENT** For Immediate delivery PDP 8A 620 PDP 11-04 01-486 8911, Telex: 922488 We also have several refurbished Dec computers.

FRENCH ENGI IGU CHULION **TRANSLATIONS** 

rates Reply Box No.

buying?

Tel. 061-766 7120

SUITES

...... from £2135

From 190 sq. ft. at Avon Business Centre

290651 FOR FULL

3031

Hugh Bennam Computer Investmenta (London) Limited 1 Bentinck Street, London W1M SRN

Competitive :

1956

FOR SALE

fectronic 611 etorage display (new); £750 +

or Rosingdale 5556

TEL. BRISTOL (0272)

for lease 3032

CONTRACT STAFF OPERATORS, DATA CONTROL KEYPUNCH PERSONNEL SUPPLIE

Tel: 01-248 6367 COMPUVAC

AIR CONDITIONING

**网络沙**莱金宝

2 Respect 9, 800 BThu Window Mounting As Conditioning units 5300 each 1.x Servomsus 14,500 BThu Wall Mounted Als Conditioning unit 5600 (Currently 1 Prestair and Servotomic are linked to give 24,400 BThu System )

ailable to view in situ in workin

Contact Dudley Evans 01-388 1827

ICL DATA PREP EQUIPMENT FOR SALE

17 machines — 71/73/12 and 1027/1028e Telephone Davies Gloucester 21444 Ext. 482 · OR

Write: Computer Se Shire Half Gloucester

WEBSTER D/P SERVICES LTD. FOR USED DP EQUIPMENT

BUY OR SELL THROUGH **NEW DE LUXE 80 COLUMN** 

**Dataprinter** 

WEBUY

**ELECTRONIC BROKERS LTD** 

**TERMINALS** 

TEXAS SILENT 780 TERMINAL MODEL 72BKSR, 110/300 Baud. complete with integral acoustic couplet and carrying case £895 DO YOU WANT A TELETYPE AND A QUIET ENVIRONMENT? NEW STOCKS OF THE EVER-POPULAR ASR33 TELETYPE WITH SPECIAL ACOUSTIC COVER. MARVEL, OUS VALUE AT £875 (FULLY OVERHAULED WITH 3 MONTHS: WARRANTY).

COSSOR UNITEL-TWO LOW-COST LARGE-SCREEN SUFFERED VDU

\* 15 diagonal CRT \* 15 lines of 80 charactors \* 6 Switch-solectable baud rates
(110/2400) \* Full/half Ouplas and Batch mode \* Full ASCII Keyboard plus cursor
control cluster \* V.24 / Current loop Interface \* Printer port for hard copy stachment
\* Altractive modern design \* GRAND NEW SURPLUSI (limited quantity only)
ONLY £550 + carriage and VAT

3.2 column printer with 96 character sot (upper and lower case), 180 cpt operatio 56 character buffer, continuous papertoad, V.24 interface, Price E1,250,

NEW ASCII KEYBOARD MODEL KB756

NOW IN STOCK—BRAND NEW 56-5TATION ASCII KEYBOARDS

Full 128 character set with ROM sincoder (upper and lower case + control shift).

Fully ITL — compatible — power requirements + 5 w — 12v Supplied with full

Light of the control of the control

FANTABTIC VALUE AT £60 + £1 50 P & P + 8% VAT (mail order total £66.42)

.—a range of spores and accessories for the KB756—adge connector. me, plastic or steel enclosure, spare HOMs. Send for data sheet/price

- ELECTRONIC BROKERS LIMITED 49-53 Pancras Road, London NW1 2QB. Tel:01-837 7781 Talex: 298694

**ZZŽZZ** 01-491 4706

NOITIDNOO WHER-AS-NEW CONDITION

Jobs for people,

and people for jobs

And if you're looking for new staff or a new jub-permanent or contract - Knights get things done.

MINI COMPUTERS &

NEW DEC ADD-ON CORE AT BARDAIN PRICES
Large stocks of DEC Parity Core type MFII-UP and MMII-MFII-UP 16K expender core (prerequisite MFII-UP)
MMII-UP 16K expender core (prerequisite MFII-UP)
COMPUTER FLOORING, Large stocks of top-quality of with jacks. Tile dimensions 2 × 2 × ¼ Bergain Prices

**PERIPHERALS** 

**DEC PDP11/04** 



(W≬D≬P

WEBSTER D/P SERVICES LTD.

CONTRACT **★ OPERATORS ★** 

**★ PROGRAMMERS ★ ★ PUNCH OPERATORS ★** 

> **LEADING SUPPLIERS OF CONTRACT OPERATIONS** PERSONNEL THROUGHOUT **EUROPE**

> > SAVE TIME AND MONEY CALL US FIRST

01-493 6696 01-499 1787

ON STREET, LOND

CoOperators supply first-rate contract operations staff for long or short term needs

RING **01.836 8411** 

Advertising Kales PHONE 01-261 8757

## **Contract Operations** Staff?

We supply all staff levels from high-calibre resources Any machine \* Anywhere

\* Anytime

Competitive rates

Wendy Clarke O1-242 4362 Rod King (Reading) (0734) 581258
Vic Heaney (Wilmstow) (09964) 27461 OPERATIONS SERVICES REGION

Dataskil LIMITED

# Promodata ·

IBM 3032 Available April 1979 Losse rates on request.
IBM 3031 Available April 1979. Lesse rates on request.
IBM 370/138 Available September 1978. Selling price: £200,000.
IBM 3277/2 VDU's 66 Char. Available immediately. Selling price:

For further details call PROMODATA on 061-439 6931 or 01-499 7507

OPERATORS BROGRAMMERS BROKEY PUNCH OPERATORS BROKES SUPPORT SERVICES YOU KNOW YOU CAN RELY UPON

KPG Ltd 28 THE BUTTS BRENTFORD MIDDX 01-568 7345

**Contract Staff** available

01 680 2400

Metra Lowndes-Ajax 1,7 Lansdowne Road, Croydon CRO 2BX We are always interested in hearing from people who wish to work on a contract basis

Lowndes-Alax

Metra

**Gemini Contracts EUROUK** 

for experienced programmers Register with an International Software Organisation Telephone 01-828 6634 or evenings 0908, 562745

computer services limited

CONTRACT or PERMANENT— ANALYSTS - PROGRAMMERS - OPERATORS PUNCH OPERATORS - DATA CONTROLLERS

Tel. 01-487 5781 28A Devonshire Street - London - W1



Contract & Permanent recruitment Total DP Support at It beat Programming Operating Data Preparation Systems Data Control Technical Supp



Are You Selling Micro-Technology?

Then

### **MICROPROCESSORS**

is your answer

As the first European publication in this expanding industry, it offers you the advertiser, a unique sales opportunity to be seen by a potential 20,000 systems engineers, designers, software specialists and application specialists in this industry. It enjoys a paid for circulation hence NO WAS-TAGE and more important it reaches your Target Audience.

For details on advertising rates forthcoming features and copy dea-

Contact:

#### LLOYD COLLINS

Telephone: 01-261 8743/8757

If you are interested in a particular article/special Feature or

#### **COMPUTER WEEKLY**

why not take advantage of our reprint service. Reprints can be secured at reasonable cost to your own specifications providing an attractive and valuable addition to your promotional material. *Minimum order 250.* 

For further details contact: Brian Durrant, IPC Electrical Press Ltd. (-hone: 01-261 8597) or simply;complete and return the form below.

	To: Brian Durrant, Reprints Department, Dorset House Stamford Street, London SE1 9LU.
•	I am intorested in Copies of the article/
	advertisoment headed featured in
	COMPUTER WEEKLY
	on paga(s) in the lasue dated
	Pleasa sand me full details of your reprint service by return of post
	Namo
·,	Company
- ,	Address
	Tel. No.

#### FOR SALE BURROUGHS SERIES L'VRC WITH PAPER TAPE I/P & O/P

complete with packaged soltware for seles bought/florninal and payroll

Phone: 01 488 2630 Phone: 0742 666251

# Directors appointed for Honeywell sales

processing division will deal with large-scale systom sales, and the

TO LET

**KINGFISHER HOUSE** 

REDDITCH

WORCESTERSHIRE

Fully fitted computer suite and ancillary offices, comprising. Computer room—100m² (1100ft²) and Engineers Office—12m² (128ft²) both fully air conditioned,

vith false floor, acoustic calling,

louble glazing, fire protection sys-

tem incorporating CO<sub>2</sub> flooding and smoke sensitive alarm system.

Ancillary Offices 92m<sup>2</sup> 991ft<sup>2</sup> in-cluding heating, lighting and par-tial carpating.

Full specification available on

Chief Estates Officer Redditch Development Corpo-ration

Plymouth Road Radditch

Words 64200 ext. 267

"GIVE US THE . . .

tools, food, clothing, heating — all cost money, but all are involved in caring for children — and much more.

computer waste, we can do the job of caring for over 5,000 children who need love, care and security.

**CAN YOU HELP?** 

Paul Harrison Mational Children's Home 85 Highbury Park Landon, N5 1 UD 01-226 2033

... we'll do the job,"

**WE SPECIALISE** 

APPROVED CARPET FINISH

Apadele Road, Chesteri Maurostie, Staffe,

**GIVE US YOUR** 

RUBBISH

f you donate your computer

waste to us you will be making valuable contribution to helping us care for over 5,000 children in need of love, care and security. Help bring hap-

piness into their lives.

Paul Harrison

National Children's Home

85 Highbury Park London, N5 1UD

01-226 2033

COMPUTERS

BOUGHT

AND SOLD

E O 8 EQUIPMENT LTD. 1 Rosedale Avenue

underland \$86 880 Tel. 0783-293818 Telex 537763

FOR SALE

Comms. Adaptors

89343 Console

A988 Printer

B9480 Discs

A9490 Cassette Unit

2 x TG 5100 Entry Machines + Comms. Adaptors

Burroughs B721, 48K

If you give us — not tools — but yo

nedium systems business. The director responsible for the Northern Region of the DP division is Kevin Kennedy, proviously manager of the Littlewoods branch at Honeywell. David Crofts is director for the Southern region and central conference.

For the general systems division, Brian England, previously director of marketing services, becomes director of the Northern region. Mike Chivers, formerly branch manager of the Wost London branch, which later became the large systems branch of the old field sales division, is director of the Southern

Previously manager of the City branch, Paul Kirton succeeds En-gland as director of marketing ser-

Appointed UK sales and mar-Appointed OK sales and mar-keting director of Honeywell's Net-work information Services Division is Alex Lockhart, formerly manager of the Division's Northern region.

George Dumper, previously mar-keting manager with Fortronic, has become sales and marketing manager with H. G. Usher and Co, the Scottish software house and consultancy. Nigel Bruce, who was formerly a technical analyst with Computer Application Services, has

Managing projects overseas, seminar. Association of Project Managers. Waldorf Hotel, London WC2. Details Internet, 01-790 3182.

AGM and visit. BCS Aberdeen branch. College of Commerce, Aberdeen, 19,30.

hnic, Moulecomb, 19 30

MAY IS

Testing of microprocessor-based quipment. G. Wiggins, Institution of

THE general-purpose computer field sales division at Honeywell has been formed into two divisions. The data managing director of Memory Comouters in Ireland.



John Cooper, until recently an account executive with IPC's com-puter data processing division, has joined Scan Computer Typesetting as a senior sales executive.

with Kienzie Duta Systems in ough, has retired.

Bernard Bennette, previously database administrator at the Open University, has joined the database

Bob Williams and Mike Duff are managers of CRL Abacus' new office in Leeds. Williams is production and client liaison manager, and Duff is a sales executive.

#### Relevance of syntax to structured pro-gramming. D. Coleman. BCS Formal Aspects of Computing Science Group. Polytechnic of Central London, London Wt. 18.30. AGM, BCS Coventry branch, Hylands

MAY 18-19

AGM. BCS Coventry branch, Hylands Hotel, Coventry, 19:30. Computers: conflict or co-operation? Seminar. NCC, Birmingham Metropole Rotel, Birmingham, 13:45. AGM. BCS, Merseyside branch, Green-bank House, Greenbank Lane, Liverpoot, 18:00.

AGM/Big Brother is watching you, OK? P. Samet. BCS Croydon branch. Fairfield Halls, Croydon. 19.15.
AGM/Communications for the smaller user. Data Processing Management Association. Bull Hotel, Gerrards Cross. 19.45. Local Authorities Group meeting, HM Computer Users' Association, HM UK Scionlifte Centre, Peleffee.

AGM. BCS, Hampshim branch. Politera Heron Motel, Amplield, 10.00. Contact Systems analysis, art of science? Frank Land. BCS Cheltenham and Glos branch. Cheltenham Motor Club, Cheltenham. 1930.

Mass communications. Roger Pye Association for Compuling Machinery. Polytechnic of Central London, London W1 18,15.

WI. 19.16.
A management guide to database planning, seminar. Data Processing Management Association. Gloucester Hotel, London SE10. Enrolment Toresa Barnard. 01-637 2171.

AGM/Film show. BCS. Reading branch. Physics Lecture Theatro, Reading University. Whiteknights Park. 20.00.

AGM. BCS, Preston branch. Waterloo Hotel, Preston. 20.00.

Standards in industrial strategy, conference, Dept of Prices and Consumer Protection/NEDO/CBI/BSI. Church House, Westminster, London.
ICL transaction processing option for 2800 CME/B systems. Simon Cook. BCS Cobel Group. Polytechnic of Central London, London WJ. 14.15.

PP management. DPMA/CW. Control Data Institute, London WL. Computerjeation, look before you leap BCS Information Reirleval Group/Asib Computer Applications Group. City/University, London ECI. 14.00. Tickets 21.00 from Scicoh, 49 Beiners Street, London Elimans. MAY 22-25 Midro/expo 78. Syber US Trede Conter, Haulily, Paris, France rom Scicon, 49 Berners Street, London

WI.

Recent developments in display hard, ware, seminar, BCS Displays Group, City University, London ECI, 14.00.

VME/K subgroup meeting, 2900 User Group, University of Kent, Canterbury, Details: Dr Spratt, (0227) 86822, ext 627.

AGM, BCS Susses branch, Brighton Polytechnic, Moulscomb, 19,30.

AGM/The Chinese computer industry.
T. J. Brooks. BCS, S Wales bronch. GKN
Sports Club, Sloper Road, Cardiff. 18 00.
AGM/Word processing D Kirshaw
BCS Humberside branch Willerby Mapor MAY 24-25

Electrical and Electronics Technician Engineers. Edward Herbert Bidg, Loughborough University. 18:30.

AGM/Chairman's lecture. BCS Belfust branch. Windsor Hotel, Belfast, 19:30.

AGM/Big Brother is watching you. OK? P. Samet. BCS Manchester branch. Sam's Chop House, Manchester. 18:15. Management Group meeting IBM Computer theers' Association, Birmingham Metropole Hotel, Birmingham Metropole Birmingham.

MAY 28
Process control in the electricity supply Industry. P. Docherty. BCS Process Cuntrol Group. CEGB, 20 Newgate Street, London. 10.30 Numbers limited apply for P. K. Andow, Loughborough University of Technology.

Microcomputers, the challenge of new technology. A. d'Agapoyeff, G. Fasher, et al. BIS Applied Systems Caff Royat.

London WI. Booking D. Pavlou. BIS 01 433 0869.

AGM. Data Processing Management Association British Institute of Management Institute of Management Messel to deves reasonables and the processing Management Messel to deves reasonables. MAY 18:

AGM/Big Brother is watching you, OK? P. A. Samet. BCS London branch. Cafe Royal, London WI 18:00.

AGM/Features and capabilities of graphic micro film recorders. M. Daniels. BCS Microform Group. NCR Ltd. 286 Mirylebone Road, London NWI, 18:00.

'AGM BCS Guildford branch: Clavadel Hotel, Guildford. 19:30.

AGM/Future impact of microprocessors on DP depts. A. d'Agapeyeff. UCS W. Herts branch. Heath Park Hotel, Itemel Hempstead, 19:30.

Software engineering seminars—the quiest for a common factor programming notation. B. H. Shearing. Oxford University. Nuclear Physics Lecture Theatre. Keble Road, Oxford, 16:30.

AGM/Programming languages, the way shead Trony Hoare. BCS Oxford branch Oxfordshire County Council Staff Restaurant Oxford 19:45.

SIA beat Alterno 3-1 and Unit the treat enterpo or and upper the ated Atkins 4.1 in the semilinal of the Worter Knock-out Cup. he final will take place on Thunds May 18 at Woodland Town's profe in Spakes Lame Woodlard Green is a 7.30 pm kick off

Robert Cox and Tim Wildington teen appointed senior systems tysts with Control Data. Cox, p viously with Rank Xerox, john applications support group, u. Wilkins, who was formerly a littad, jours the professional sens

Pormerly with IBM and Bris Acrespace, David Fieth become systems analyst at CDC.

Dents Brassington, Roy Into John Gillan and Ivor Greats ined Wespac us salesmen his ington covers both sides of the Centities, Cheshire and Rom Wales, Prater takes North-Wa london and the Home Com Cittan's area is Scotland and its northernmost counties of Engine and Green is responsible for to London and the Eastern counts

ness Computers 1.td where hew publicity manager to join Du Recording Instrument as manager marketing communications: Is Morley, formerly UK genen manager of Geveke Electronics, in joined DRI as international sile

John Elmitt, previously a distr manager with Obvetti, has been Northern area sales manageria duta products with Nolton Con

#### Human Choice and Computers

THE Program Committee and West ing Group 9.2 of the HIP Second onference on Human Choice as Computers will be according at the Nutional Computer Conference Anabem, California in the Sir Pero al Room of the Shecaton Anahem Hotel The Program Committee will meet at 9.30 am on Wednesday, Jul and the Working Group at the

Simo time on Thursday, June 8. The IFIP Conference is scheduled to take place on June 5 8, 1979, fa





INFORMATION, SIRRAH!



WE CALL THE SYSTEM

Will and the second

GOT A NICE PING TOIT!

Bull

the CUA executive council, told Computer Weekly that the aim of such agreements would be to TECHNOLOGY, SIRRAH — WFORMATTEN TECHNOLOGY! which could be written into contracts as a definition of the service expected by the user.

ferent eriteria that could be your system."

cuss recommendations by an ICL CUA committee that all performance tests, etc.

with ICL, some mutually satisfactory arrangement could be reached and he was pleased by the positive response the CUA report had received from Bill Downing, the manager of Com-mercial Control at ICL.

#### -Eastbourne briefs-

tween VME/K, and VME/K.

CTM was first mooted when the their systems significantly.

2900 was still in an embryonic New Range phase, but taded with the emergence of VME/K to a CONFIRMATION come from different design than first engle specific that ICL is to make asped for the 2000 range of available soon an poline operating systems.

ABOUT E3million is being inv- ICL will be soft-pedailing the ested by ICL in creating a 2900 implementation of VME/K until range compatible Common Target, after release K\$V16 next Febru-Machine interface to ensure systems programs are portable be- CIM, standards, would require tween VME/K and VME/B. The users of sorter releases to change the standard of the standa

## MALCOLM PELTU REPORTS ON THE ICL USER CONVENTION IN EASTBOURNE

Weekly that ICL would do all it

could to encourage DME users

to switch as soon as possible to

VME/B or VME/K, the 2900

operating systems. He pointed

out that users faced with the

inevitable costs involved in sys-

tem conversion are at their most

vulnerable to competitive

manufacturers and that the

DME users were still essentially

Dr Alty predicted the "death of the 1900" within ten years.

Over the next four years, he said,

the picture for 1900 users would

dent suppliers would be offering

products, particularly software

systems, to the still large cus-

e good because many indepen-

in that pre-transition period.

# 1900 users plea for a 'golden bridge' to future

sition aids for 2903 users.

network standards.

association.

He also asked for a commit-

ment from ICL to international

ICL marketing director Peter Ellis emphasised ICL's commit-

ment to 1900 users for at least

seven years (see front page) and

commercial director Peter

Simpson said he would be fol-

lowing up Dr Alty's suggestion

in detailed talks with the user

Throughout the convention

That was why so many users

But Dr Alty and Ed Wilson,

who had experience on early

native 2900 mode. He therefore Chris Wilson told Computer

have only a few years left in called for a model, such as a which they will have a suf-2940, to plug the gap between ficiently powerful voice to significantly influence ICL to the 2903 range and the 2950 and provide a "Golden Gate" bridge the provision of adequate tranto the future rather than a "Bridge of Sighs".

Summing up a consistent theme throughout the 1978 ICL User Convention in Eastbourne the need for ICL to give priority to easing the transition of its existing customer base to the 2900 series - Dr Jim Alty, director of Liverpool University computing centre, called on ICL to consider with urgency the Ayon Cinnamond has left But provision of improved 1900/2900 transition aids.

And he warned 1900 users not many users expressed their to gain a sense of false security satisfaction with 1900 systems. over the next few years when now that the software has sett-ICL and independent suppliers would be wooling them. led down.

In particular, Dr Alty asked had greeted with relief the an-ICL to show a more sympathetic nouncement last year of the attitude to allowing the connec-DME emulation system which tion of non-ICL devices to the enables 2960 and 2950 systems to 1900 and to ensure, as far as possible, that new peripheral run 1900 workloads unchanged. devices for the 2900 are also available to 1900 users.

He pointed out that 2903 users 2900 systems with the Central Computing Agency, emphasised that DME only delayed the time are in a similar position to 1900 users because the 2903 microcode currently runs 1900 soft- for system conversion to 2900 or ware, even though it has a some other system.

#### after the source program conv-THE transition from existing

ersion, logic errors were likely to machines to 2900 will cost a creep in.
Wilson pointed out that 1900 users were faced with more great deal of machine time and money, and should not be confused by attempting to alter the complex conversion problems systems at the same time. than System 4 users because the

That was the clear message of 1900 has a 24-bit word structure a talk on transition aids given by whereas both 2900 and System 4 Ed Wilson, who is currently are byte machines. working for the Inland Revenue. On the transition aids availand Alan McCabe, of the Central able, Wilson said that the 1900 File Conversion System offered

Computing Agency. Both emphasised that the aim of transition should be to change systems with the minimum of alteration to data structures and program logic. It was necessary to keep the system's program and data structures unchanged in order to provide a yardstick against which to judge the correctness of converted systems.

They also stressed that data and programs should be altered in parallel. If data was changed

users should have "ser-viceability agreements" in con-

tracts to define the level of ser-

David Kelson, a member of

vice they expect from ICL.

Defining level of service A MEETING is to be held shortly taken - uptime, reliability and resilience ratings, benchmark between ICL and users to dis-

by ICL required careful pre-

planning to ensure data descrip-

tions are accurate and can be

McCabe praised the 1900

Cobol source conversion system

pleasing and bug free". But he

criticised the System 4 Cobol

conversion system because it

not handle the library COPY

But he believed that, working

set of performance criteria all users should examine the benefits of having serviceability agreements and suggested to He accepted that it would be users that "the first and most important task is to identify difficult to define such standards your objectives in terms of the because there were so many dif-



### Qualified user satisfaction with VME/B

AFTER initial performance pro-blems with its 2970 under VME/B, W. H. Smith is now "fairly happy" that the system is on the right path for providing an effective "unable" service. But the Remote Job Entry facilities of VME/B and the lateness of some software developments were criticised.

According to David Gaylor, Smith's computer manages, the main improvement offered by the 2970 over the \$900 series is in its date and file handling capabl For programs written from scratch in native mode 2900 code, Gaylor said that the 2970 performed about 2.5 times better that sion from 4900 to 2900, the 2900 formed significantly worse that the 2970 running programs unde the BMEEP emulation system o programs that had been converted from \$ 900 Plan to \$800 Cobol.

that had been written directly fo the 2900 took up about 7% of th capacity of the 2970 whereas similar system took over 30%

## Improve facilities for distributed processing

adequate distributed intelligence systems, ICL must mprove the Remote Job Entry facilities of the 2900 and should recognise the 2903 range as in-telligent terminals in their own That is the view of J. J.

omer base and 1900 users would also remain a key concern of Williams assistant director of finance (computer-services) But after about 1982, the numbers and power of 1900 Authority which is based on a users would quickly diminish.

mance, reliability and user acceptability of the 2903 systems to date, Williams said that the authority would not be able to achieve full benefit from the system unless ICL offered some mproved capabilities.

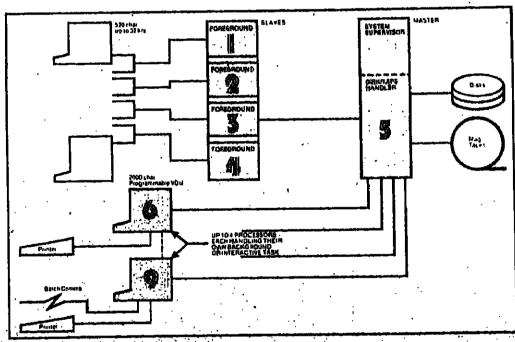
He said that there had been better RJE access to an IBM 370/158 at Compower which the authority used on a bureau basis. Failute to inform users of line problems and difficulties in

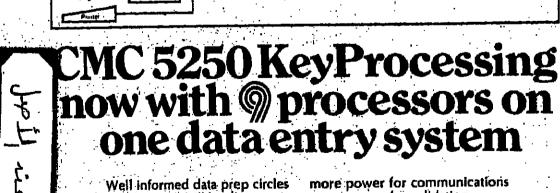
restarting prints were high faults with 2900 RJE. David Gaylor of W. H. Smit also criticised 2900 RJE.

Williams said that ICL's cu rent terminal philosphy wa based around the 7500 serie processors, but he would like see the 2903 having th capability of acting as a concer trator through which termina could be directly connected

# 

# Let's put you in the picture





know that 1978 will be the year of MPK (Multiple Processor

Because well informed. means power.

more power for validation more power for supervisors more power for terminals more power for disks data prep people know that MPK ... more processors = more power more power = more work

back, up to 48 notes or rests at

time, Mundbender, a kind of

Master Mind that involves your

guessing an wedgit number (you

pick nr: Blacktack 13: and Macie

Square, a visual game tha

requires you to manipulate a

pattern of LLDs until you get the

All of these games have been

winning combination.

# SMALL COMPUTER SYSTEMS AT PRICES YOU CAN AFFORD.

The PDP-11V03 and the DECLAB-11/03 are small computer systems from Digital Equipment - the world's leading minicomputer manufacturer. They are based on the proven LS1–11 microcomputer and the RT-11 operating system.

The PDP-11V03 is a complete computer system with between 32k and 56k bytes of memory, dual floppy disk drives, hardcopy or video terminals, RT-11 operating system plus a choice of languages. The PDP-11V03 is easily extended to support multiple users, and there is a wide range of hardware options—floating point, real-time interfaces, synchronous and asynchronous communications and cartridge disks.

The DECLAB-11/03 is a complete laboratory computer system with between 32k and 56k bytes of memory, dual floppy disk drives, hardcopy terminal or video waveform (with hardcopy), a choice of interfaces (A/D, D/A, digital I/O, I EEE-488), RT-11 operating system, FORTRAN IV with real-time extensions, scientific subroutine package and BASIC.

Designed for on-the-spot interactive computing and backed by a vast library of software, Digital Equipment's small systems need not be limited to a single task. The more you use these systems—the more you will realise their potential.

The PDP-11V03 and the DECLAB-11/03 brings computing to you at a price you can afford. For the Small Systems Facts File 'phone David Watt-043871 5202 (24 hour line).

Small Systems Sales Dept., Digital Equipment Co. Limited. The Hall, Church Street, Welwyn, Herts., AL6 9NY.

Shape of computer games to come

TV GAMES are going to be passe this Christmas, for the pundits are now predicting that keeping up with the Joneses will entail buying remote control model cars, and hand-held computer games. There are indica-tions that the model cars will use derivations of the ultra-sonic TV emote control units.

In the hand-held computer games area, one has already appeared in the US, though i will not be sold in this country, at least in the foreseeable future. The toy is called Merlin, and it is being sold by Parker Brothers, a dassachusetts-based company. The company first entered the computer game marketplace lest autumn with a game called "Code Name: Sector."

Merlin looks a bit like a telephone handset with pushbutions between the mouthpiece and earpiece. In fact, the machine does have a speaker in it and it makes about 20 different noises as you play with it. In-cluded in its sonic vocabulary is musical scale that enables you to play tunes you have com-

## Delicatessen in personal hardware

NEW computer store, Byte A NEW computer store, Byte Shop, opens this weekend in London and promises to be something of a delicatessen in personal computer hardware.

Springing out of the DEC OEM house, Computer-Aided Systems, the Byte Shop has, in fact, nothing to do with its famous US namesake. It will, according to Bill Cannings, "seli just about anything in personal computer equipment that can be sold through a retailer. We won't be handling just one product line."

dust line."
Among the manufacturers that will be handled initially are Cromemoo, Dynabyte, North Star, South West Tech, Apple, Smoke Signal Brondcasting and the Commodore Pet.
The Byte Shop is at 426 Cranbrook Road, Gants Hill, liford, opposite Gants Hill Tuke station and opens for business officially on Saturday.

## Errors in digital design

THAT fundamental errors can be made in the design of digital electronic circuitry has long been the view of Ivor Catt. Now, with his colleagues David Walton and Malcolm Davidson at CAM Consultants, he has published a hook on his theories. published a book on his theories Aimed at tilarifying aspects of this important subject.

Called Digital Electronic Design\*, the book explains their views on such subjects as earthing in digital systems, interference from the mains, the distribution of DC courses to be such as the systems. tribution of DC power to logic and the interconnection of logic A sound knowledge of what is already standard practice in digital design is required to

appreciate many of the technical points being made in the book. It does, however, mark a fundamental break with current digital concepts which, according to the authors, depend lar-gely on analogue theories. Their approach is to return to, and update, the electromagnetic theories originated by Oliver Heaviside et al when telegraphic communications was a new

\*Digital Electronic Design by Catt, Walton and Davidson, PP127, 68; CAM Publishing, 17 King Harry Lang, St Albans, Herts,

uses the sounds in its six games. talking to you like Harpo with his musical instruments.

In addition to the speaker, Merlin has a control panel with 15 keys, four used as a system control and 11, numbered 0 to 10, for handling data. All the keys are pliable plastic membranes. actuated by a light touch. The 11 data keys have transparent cen tres, revealing LED lamps which respond to your touch.

squeezed into a single TMS1000 from Texas Instruments, The To play with Merlin you press chip has a 2K memory, doubt the "New Game" key and a that of the minimum TMS1000 number from one to six. The processor. The development machine's repertoire includes: costs of the game are a secret Tic-tac-toe, which it plays but are believed to be in the poorly: Echo, in which you tell \$100,000 range Whatever the cost, Parker Brothers is almost Merlin how many notes to play, which it does at random, and certain to recover them as the then you try to duplicate the device will retail for about \$33 in little tune; Music Machine, in the US.

If you think WAYER ELONG found the most cost effective key-to-disc system from the world's leading supplier, and it's not from Inforex, well...

Think again! About cost effectiveness: from inforex you can get a complete three key-station system for under £10,000. Think delivery again: you could do away with punched cards by the and of the month, think again about any less a reliable, well proven range backed by a national service team. Any way you think about it, inforex offers the best available solution. The world's leading supplier, with over 4,500 systems worldwide, will take you from puriched cards to key-to-disc (expandable to meet your most exacting requirements), to data management and to distributed processing with a compatible product range and the support to make it happen. Telephone Inforez at 01-863.8311, ; or send the coupon for full details to: Inforex Limited. INFOREX Inforex House, Headelone Road. Harrow HA1 1PL

Data Management Systems

Address \_

think again!

ï	Please send me further information on Informa key-to	j.dist
1.	Name	
	Сотрапу	مستند ج

#### **OP SPOT** By Bernard Allen

partment who, without any budget, is expected to become

an expert on security, safety and

He considers that security, fire

and safety requirements are

fire, overnight."

# Security and safety neglected—survey

officer does not wish to get in-

volved in DP matters, other than

by putting a lock on the door

and setting up a guard service

which may by-pass the machine

On fire procedures, Duffin ac-

knowledges that the computer

room has particular require-

ments. Operators' fire proced-

ures might need to be different from those followed in the rest

of the building since they must

include powering down the

machine and storing tapes and

procedures should be planned

company's fire officer. As with

security, that communication is

one and everyone is apparently

welcome to pay us a visit any time, day or night."

The computer room is described:
"The machine room closely

resembles a tomb, having no

windows, no fire alarm and very

little fire-fighting equipment. The floor is never cleaned and is

littered with unused stationery, disc packs and blank company

"The small staff of operators

covers two shifts and overtime in the event of holidays

sickness or overtime, no cover i

provided and a single operator

must do the work of two

regardless of the length of time

"The facilities available to us

are virtually non-existent. There

is no rest room containing the fabled fridge and cooker, which

we understand some privileged operators have access to. The

coffee vending machine rarely

through incorrect editing, it can be corrected through the operating system rather than

having to do a manual run.

be left between 'ENDMAC' and 'MACDEF', which also eases the reading of the

"Secondly, space lines may

"Thirdly, by using the hash

(#) comments may be in-

they will then be printed but not processed. Under George

serted into the Macrofile, and

2 they may be placed any-where in the file."

And on staffing:

Finally, facilities:

But he emphasises that such

generated by the computer environment survey carried out by Opcomm, the operations group centred in Coventry (Op Spot, April 13). It is in this context that Bill Duffin, physical security adviser, writes to Op Spot.

"I was pleased to see that the Opcomm survey showed what some of us have been trying to say for years - that basic security, fire and safety requirements are not met at many computer centres," says Duffin. DPMs are often blamed for

any shortcomings in these mat-ters, but Duffin, who views the situation from a different angle, feels that company specialists in these fields are too often reluctant to become concerned with the DP department, with extremely poor results.

"Eventually," he continues,

## and what it means at one installation

we laughingly refer to it, is situated some 500 yards from the computer centre, and so the operators have to wheel a trolley across an exposed yard and into a large warehouse.

So says an operator making some startling revelations" bout his installation in a letter which is amusingly written in spite of its serious content.

He continues, "Once inside the warehouse, our intrepid operator is confronted by a miniature Everest. The unlucky chap must then make a brave ascent to the top of the mound and drop the required stationery down to his accomplice." He mentions the lack of con-

sideration given to first aid. "Extra spice is added to the stationery department adventure when it is undertaken outside of normal office hours with the knowledge that there are no trained first-aiders or first-aid supplies on hand in case someone should fall or be hit by a box of stationery."
On security at the centre:

#### HINT OF THE WEEK More Macrolist ideas

THIS week, three further hints relating to the listing of the George 2 Macrofile. They are from B. Miller, a project manager with RHP Bearings of West Yorkshire, who has already contributed to Op Spot on this topic (CW, April 27).

He says, "Three other ideas which may prove useful to anyone using George 2 are: "Firally, put the macro which updates the Macrofile as the first in the file. The

benefit of this is that should the Macrofile become corrupt

## Come and exchange views

THE DPMA meeting planned for Tuesday, May 17 provides a rare opportunity for the exchange of ible format with a views between operations staff

Operators often complain that nobody listens to their point, of view. Well, op Spot is listening, and Samard Allen would like to hear your opinions and ideas on all matters relating to computer operations.

Op Spot, Computer: Weekly, Dorset House, Stamford Street, London SE1 9LU. Telephone cells are equally, resigning and directly on 01-261 8035.

directly on 07-281 8035.

The meeting will have a flexible format with a panel of speakers comprising operations staff and DP managers. Operations staff taking part are Ron Linton, computer operations

controller at Manchester Polytechnic: George Stevenson, a contract operator; and Mike Rees and Dave Charles, of

The venue is the Control Data Institute, Wells Street, London W1. Light refreshments will be available from 8.00 pm to 8.30 pm, after which discussion will go on until about 8.00 pm.



#### Two move to Nigeria

TWO operations people employed by Richard Costain Ltd have moved from the company's London site to take up closely related and should be treated as such. "To be really effective the whole package needs to be thought out carefully, with risks identified positions at a new Costain in stallation in Lagos, Nigeria. For George Otta, who deand recommendations listed in

"At this stage standards are drawn up, staff trained in-house and finally an on-going security programme agreed. "Please let us cut out some of parted on May 2, the move means promotion from operations manager to DP manage Mike Collins, who has already been in Lagos for several weeks only in close liaison with the the wonderful theories drawn up

is operations manager.
The all-Nigerian operations by 'experts' over the past few team will have no computing experience and Costain, aided years and let us get down to basics. A good 'no frills' proby ICL training personnel, will gramme will protect staff, data and maybe even hardware — provided the staff are involved," says Duffin. give them courses in computer appreciation, hardware and

# IBM retains its grip on world market THERE is no sign of IBM's grip large number of very old

on the world general-purpose computer market slackening, according to IDC's estimate of the values of the installed bases of the major manufacturers as at December 31, 1977, IDC, which applies a stringent current mar-Honeywell ket valuation to installed machines, gives IBM 71% of the market, followed by Honeywell

The value of IBM's base can be assumed to reflect large numbers of 138s and 148s delivered over the past year, while Honeywell's base includes a

Amdahi Council's rent collection system caused confusion

THE two-year-old computerised) rent collection system used by Manchester City Council is being modified following problems in the print-out of statements which resulted in some confusion among tenants.

"The print-outs were issued according to the period at which each tenant paid," explained Councillor Allen Roberts, chairman of the City Housing Committee. "If it was fort-

Advanced Systems and Programming Division

Kezi Time/Data Communications Division

Database Division

Fundamentals of Teleprocessing Systems 5-9 Jun Landon Systems Design for Teleprocessing 12-14 Jun London Data Communications Networks 12-14 Jun London Data Communications Networks 12-14 Jun London Distributed Processing Systems 20-22 Jun London

Structured Design Division

Jackson Design Methodology: Training Workshop

12 May - 2 Jun Cupenhagen 5-16 Jun London

Jackson Design Methodology: Instructors' Workshop 19-30 Jun London

The Database Approach: Df Management Assessment 7 Jun London
Database Software: Overview 26-28 Jun London
Database Implementation: Overview 28-30 Jun London
Distributed Databases 31 May - 2 Jun London
Distributed Databases 31 May - 2 Jun London
Database Integrity and Recovery Techniques 21-21 Jun London
Software Selection for On-line Databases 5-9 Jun London
How to Get the Best out of IMS 19-23 Jun London

Advanced Systems and Programming Bleedon
Performance Measurement and Analysis: Tools and Techniques 20:22 Jun Lundon
Capacity Planning and Performance Management Workshop 13:15 Jun Amsterdam
Computer Systems and Installation Security 20:22 Jun Amsterdam
Advanced Techniques for Systems Reliability, Availability and
Maintainability 5:9 Jun London
Systems Design Techniques 16:23 Jun London
Systems Design Techniques 26:30 Jun London
Programmer Conversion to ANS COBOL 12:16 Jun London
Structured Programming in COBOL 27:29 Jun London
Advanced Software Engineering Tools and Techniques 5:9 May London

Management Development Division

Programming Management - Level I 5-9 Jun London
Programming Management - Level I 5-9 Jun London
Planning and Control Techniques for Project Development 31 May - 2 Jun London
Plan to Organise and Control Structured Programming Teams 5-9 Jun London
Plan to Use Structured Wolkthrought 12-13 Jun London
Plan to Improve Systems Development Productivity 31 May - 2 Jun London
Advanced Tools and Techniques for Controlling Systems Development
19-23 Jun London
Planning Corporate KDP Resources 26-30 Jun London

often arrived just before or after the tenant had paid, so they were indicated as being either in arrears or in credit. It has caused some concern, especially to the

machines, whose value is there-

value of

Burroughs

NCR DEC

% of tota 71.0

older people who don't like the idea of being in debt."

The problem should be solved by October when the print-outs. prepared on an ICL System 4/72. will be issued on a quarterly

# 2900 TRANSFER

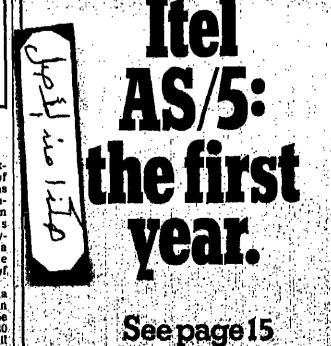
Highlighted at the ICL Users' Convention at Eastbourne, this conversion facility developed by the Post Office translates files produced on ICL System 4 into 2900 format with remarkable

Translation can take place either as a separate process or during normal program running.

This tool is available through NDPS-'phone 01-432 9258.

#### National **Data Processing** Service

NDPS, Tenter House, 45 Moorfields, London EC2Y 9TH



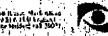
#### Mintenmouters and Microcomouters Divition Minicomputers Systems. Assessment and Application 13:15 Jun London. Minicomputers Systems. Evaluation and Selection 20:22 Jun London Minicomputers for Commercial Real Time 27:29 Jun London Microprocessors. Assessment and Application 6-8 Jun London Microproputer Programming and Design Techniques 14-16 Jun London Microcomputer Software Engineering Techniques 19:20 Jun London Microcomputer Software Engineering Techniques 19:20 Jun London Advanced Microcomputer Design Techniques 21:23 Jun London Openithens Stivishes Introduction to Computer Operations 7-8 Jun London 1881 DOS and DOSIVS Rusic Operations Techniques 6-8 Jun London IBM OS and OSIVS Bate Operations Techniques 15-15 Jun 1 oncon IBM DOS and DOSIVS Advanced Operations Techniques 20-22 Jun London Operations Trans Control and Supervision - Level I 19-23 Jun London Operations Team Control and Supervision - Level II 28-30 Jun London Operations Idanagement and Control Techniques 12-14 Jun London On the Operations Management and Control Techniques 15-16 Jun London Please send me further details of: -Advanced Systems and Programming Real Tinic/Data Communications

Data Base Management Developme Minicomputers and Microcomputers Operations

Structured Design

m6:	·		
Je:		.:	 
ganisation:			 

INFOTECH



## Japanese invest £2m in viewdata system

THE Japanese PTT Nippon Telephone and Telegraph is developing a viewdata system to handle the Katakana syllabary, reports the French paper Electronique Actualités.

NTT plans to invest over £2 million in the system for hardware alone. Software development will be financed jointly by NTT, broadcasting authorities and information providers such as newspapers.

Trial of the system, called Captain, for character, pattern and information network, is due to begin at 1,000 subscriber sites

racter set will require a 64K-

byte page store in the receiver, and adaptors are expected to cost about £250.

The system will be able to handle 3,000 different characters.

the Conference of European CUA and, at the end of last month, it organised a conference in Paris on standards.

He said that the Commission was seeking user help in three main areas: standardisation, software portability and transp.

#### Payroll service A NEW payroll system called

Payfact, put into service last month by Computer Manage ment Group, is now used by more than 100 companies with a total of over 11,500 employees. The system runs as a bureau service every night of the week at all CMG's data centres and The complex Japanese cha- costs from £10 per payroll of 40

#### **EEC** leads on user freedom

● From front page

software portability and transnational applications. And he suggested that European users ure likely to submit to the Commission recommendations on terms of contract.

But unless there was some financial help for users working on committees concerned with topics of international and national significance, the outcome, he said, "will be a mere fraction of what could and should be adhieved

#### LETTERS TO THE EDITOR

# Layman needs to be better informed

ible and reputable professional journal such as your own shared my views on this subject.

I was recently invited to open a discussion at the Institution of Electrical Engineers following a paper presented by Sir Ieuan the "Horizon" programme in much the same terms as your

I WAS very interested to read Computerview and not a little cheered to find that a response cheered to find that a response present who thought, mistakenly, that I was including the technical press in my condemnation of the only too popular "doomwatch" approach to tech-

nological innovation. We in NRDC are both con-Maddock on "Electronics — the challenge of the future". In my remarks I referred specifically to the "Horizon" programme in generally and to advances in electronics and computer applications in particular as being very much in the public and national interest at this point in

to speculate on the sociological and ecological problems the could arise if the pace of change were dictated solely b economic pressures. Fortunately, this is most unlikely to be the case, but in our view the served by fuelling the large degree of apprehension or preudice which surrounds a subject on which the layman needs to be much better informed. W. MAKINSON

Managing Director National Research Development

# Reducing cost of labour to create full employment

reducing the cost of labour to create full employment, as discussed in your correspondence columns, it is worth pointing out that the general principle behind such policies has not yet been given sufficient consideration. For example, no such policy was considered by Barrie Sherman (Futureview, February 23), even in the form that Keynes proposed: reducing real wages by

suggested a further dose of the Keynesian solution with the lowering of workers' standard of iving at a time when technological change is making large increases in real wealth possible. It does need to be appreciated, however, that the present phase of technological change is likely to bring a fall in the real value of labour, just as happened in the first industrial revolution.

This point was well understood at that time by Robert Owen and well expressed by his son: "Will any man who stands on his reputation for sanity affirm that the necessary result of over production is famine; that because labour produces more than even luxury can waste, labour shall not have bread to eat? If we can imagine a point at which all the necessaries and comforts of life shall be produced without numan labour, are we to suppose that the human labourer is then to be dismissed to be told that he is now a useless encumbrance which they cannot afford

technological change can bring out conditions under which a large proportion of the population cannot live by the sale of their labour alone, and they should not be expected to do so.

This should not mean that their labour (which can still have a significant value), should be wasted in the dole queue. where they are denied the opportunity of raising their standards of living and enjoying the sense of satisfaction that a

BEFORE discussing the details job can bring. Both national of the different methods for wage and labour subsidy policies promise to avoid such waste and should be given much wider consideration. I hope Barrle Sherman and his research team will be among those to do this.

With regard to the distinction

between a national wage (al

auggested by John Harris and D. J. Grover) and labour subsidies. cannot see how any major difference could arise in the long run, except that the former creating inflation.

Naturally, I would have been shocked if Barrie Sherman had shocked if Barrie Sherman had wage, perhaps giving it a better image. This may well be import ant, but at this stage of the discussion when both policies are so far outside orthodox economic thought, the short term advantage that labour subsidies have of enabling the raising of expanditure taxes without raising prices, make them more immediately interes-

I agree with Grover that lowering the cost of labour as a factor of production means that factor of production means that certain new technologies should not be introduced. This is expecially true if they make a high demand on other factors of production such as, for example, energy. Indeed, many existing processes should be phased out because they waste scarce resources. (incidentally, others should be phased out because they degrade labour by creating boring and unpleasant jobs.) It seems likely, it were, that there are many applications for the new microprocessor technology which enable a saving of both labour and other resources. Such applications should Such applications should& To me the message is simple: obviously be greatly encouraged

If it is true that the problem of unemployment can be solved by reducing the cost of labour (and it has yet to be shown that it's cannot) and if the new technot logy can take much of the drudgery out of life then wishould all look forward to great benefits from this next industrial

G. R. BEACON Research Felion Leeds Polytechnic



engineering with really powerful intelligence. It already knows everything about technical drawing, without wasting computer time. It also knows about scale and measurement, so it just needs a firm base to work from and the rest falls precisely into place.

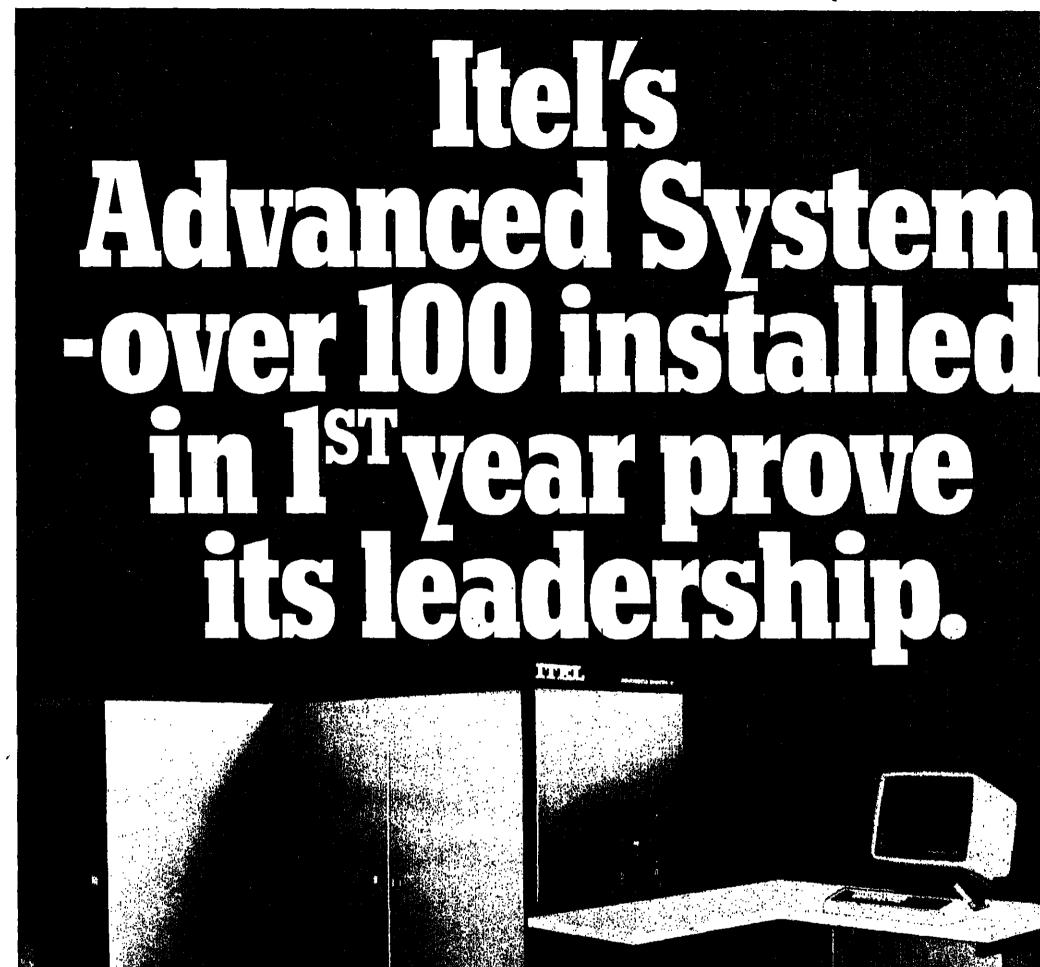
fast — with the ability to translate the message accurately into the

That's why the CIL Envoy plotter combines immaculate

With its four pen carriage it draws at axial speeds of 30cm/sec on paper sizes up to A0. Coming from Britain's No. 1 manufacturer of digital plotters, everything about Envoy adds up to excellence - in drawing quality - ease of operation that is unequalled - and low cost, Find out more about automated drafting! Ring or write for Envoy data - it pays to find out about CIL.

## **CIL** The Systems House

COMPUTER INSTRUMENTATION LIMITED CHANGEERS FORD EASTLEIGH MAMPSHIRE SOSSYY UK TELEPHONE (04215)88321 TELEX. 47328



Itel's Advanced System was introduced one year ago. Since then over 100 have been installed in locations around the world.

This is a measure of the success of Itel's revolutionary concept: a family of computers with a choice of CPUs (AS/4. 5 and 6) directly comparable and software compatible with IBM (148, 158, 168, 3031 and 3032)...

Itel's Advanced System holds the lead in price and performance over all other systems.

This year of success proves it.

To find out more about the Advanced System, ring? David Addison, ITEL (UK) Ltd, Tel: 01-741 1482 or David Harmer, ITEL International (Europe) Corporation, Tel: 01-584 5050.



## Hotel system links up office functions

ment system has been installed in the 850-bedroom Tara Hotel in London by Cara Consulting. The real time online system, Data Host, was developed by Sigma Data Computing Corp of Rockville, Maryland and uses hardware supplied by Four-Phase Systems.

The Tara Hotel and Cara are

both owned by Acr Lingus, the Irish airline. The Tara is the first hotel in Europe to be equipped with the system, for which Cara has a distributorship agreement.

Data Host automates both "front-office" functions — such

Plessey wins US contract

THE news that Plessey has been ration with Collins Radio, to provide radio equipment for the US military, has been seen in some quarters as a consolation prize for its losing out on the two-year battle for international

and account preparation — and "back-office" functions such as payroli, general ledger, and

management reporting.
The telephone billing system is a good example of the scope of the system. Calls, dialled directly by a guest from his room, are recorded automatically by the system. The cost is then computed and added by the system to the customer's bill.

Cara Consulting is the consultancy, software and systems house division of Cara Data Processing. Formed in Eire in 1966, the company became a wholly-owned subsidiary of Aer as reservations, checking-in. Lingus in 1972,

blames the US government's export policy for the poor per-formance of the existing Romcontrol Data venture which builds printers and other

A COMPLEX series of agreements between US multi-national, Litton industries, and West German group, Diehl, will result in Litton subsidiary, Triumph Adler, acquiring the Diehl Datensystem company, which makes and sells very small computer and office systems. In return, Diehl group will get 12.8 % of Triumph Adler's parent, Triumph Werks Nürnberg, with an option to increase this to 25 %. Triumph Werke was 98 % owned by Litton, whose

some of the products were out-

Im Liz-call me on

MOINEERING LTD

at US policy

Triumph Adler acquires Diehl Datensystem

Müller, which builds and sells up-market business computer products is involved in the agreement to the extent that Triumph Adier

gets marketing rights to CTM products, which

slot neatly above the office computers in the

TA product line.
TA will also collaborate with yet another

As a result, the venture

data services company, an R&D centre for applications software, nent of CDC computers. rights to manufacture certain computers in Romania, and to assemble certain peripherals, and joint research and development undertakings.

and agreed to pay civil penalties

ICL shares gain strength

THE Stock Market has shrug-ged off the resignation of Genif Cross as managing director of ICL, and given new man Dr Chris Wilson a solid vote of confidence.
ICL shares, which stand at 180 pence at the end of November, two weeks after

Cross announced his departure, reached 278 pence this week. The strong advance in ICL's theres is in shore contrest to the market as a whole which has been drifting downwords. Brokers and analysts like the fact that the last dividend was covered five times by profits, and look for a 20 to 25% ad-

Ferranti sets up three new companies

vance in pre-tax profits for the year to September 30.

Three-new companies are to be formed by Ferranti to act as sales agencies in these areas.

Ferranti Computer Systems Wythenshawe and Military Systems Division, which produce equipment based on the F1600 and Argus minicomputers. together with the F100-L microprocessor. The new company will also be responsible for sales by the Special Components department. Its managing director will be Peter Dorey.

Ferranti Electronic will take sales responsibility for the Electronic Components Division, which manufactures a wide range of semiconductor devices, including the F100  $I_{lpha}$  . Munaging director here will be Alan Shepherd

On the instrumentation side, which includes aircraft and weapons equipment, the new company will be Ferranti Instrumentation, with Lester George as managing director.

NEWS IN BRIEF

Monowhile, under a separate agraeman with the US firm, Pertoc, Triumph-Adleria to manufacture under licence the Pertec XIA

distributed processing system and sell ht West Germany, Austria and Switzerland at the TA-1540, both directly and through

doulors. Portue already has an auroca

Joining the operator game

FINDING "operator of the year appears to be quite a populy pastime nowadays, and Work plex has joined in the fun by organising a competition to dis cover the best operator of the word processing system. More than 300 girls have been

invited to answer nine questions related to the use of the company's wordstations. The wines will receive a £150 prize and three runners-up will get 🖼 .

The awards will be made a the International Word Proces sing Exhibition at Wembley or

TALKS between Olivetti and

Stack have culminated it Olivetti becoming a parinerit the components specification and bulk purchase company (CW, May 3) The company, based in Frankfort, was formed three years ago by Control Data ICL, Nixdorf and Plessey, to draw up specifications for semiconductor component required by all the companie and to gain the benefits of bulk purchase orders from manufacturers (GW, March 20, 1975)

**B6800** for ICI

CONSOLIDATING its position as a major maintraine supplic to several ICI divisions. Bur roughs is to supply a large scale Histor maintraine to the Plan Protection division at Fernbust near Hastemere at the end of the year, ICI Plant Protection currently runs a B3700 and B2700 at tho site, and has recently placed a supply order with Nixdorf for multiple 8820 intelligent terminal systems for installation all over Europe (CW, March 30).

Faster access

TO speed access time on its IBM compatible disc subsystems THE policy of decentralisation cache memory called the 3700 in the Perranti management, which uses charge coupled destructure being pursued by vices to store frequently used managing director. Derek Akin data, it can have between one and is memory called to vices to store frequently used data, it can have between one and is memory companies of the store of the companies of the companies of the companies of the companies of the component activities. Memorex has introduced ? daystopma a system while CD buffers and a powerful processor. (CW South

(CW. September 8, 1977)

DISC drives with capacities of will handle sales for the Digital 63.9 and 128.4 Mighbytes have. Systems Division and the been introduced by 18M for use with the System 34. The previous maximum disc capacity 5 was 27.1 Megabytes

EPSS open day

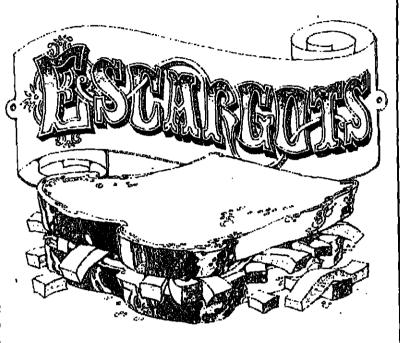
EUROPE's first demonstration of a public packet-switched self vice will take place on June 22 when the Post Office and Bi users of the Experimental Packet Switching Service co-

Training centre

SPERRY Univite has opened a tisining centre in Hill Sugar filrminghum, It replaces the company's two London transits. centres and will be used for the tomer training, systems supplied and sales training.

# 

All sorts of contracts for all sorts of tastes



At Knight Computer Services, we know better than to offer a chip butty to an escargot freak. After all, we're well aware that most DP people have as individuals an idea of their perfect contract as they do of their favourite food. So we take the time and trouble to discuss people's individual preferences.

woman who comes to see us get the contract that's to their taste. exotic dishes, we should point out that we can just as easily offer you a contract in a part of the world where home cooking means Bauern Bratwurst or Osso Bucco, as in the more familiar territories of Yorkshire and to make sure that every man or pudding and jelled eels.

PLAN + DRIVER + G11 - Herts

2903 RPG11 - City

ICL 2903/4 Ops.

OTHERS

ICL 2960/VME/K Ops.

System Ops.

**JCL Writers GCOS** 

ICL 1900 G11, 11 + & 111 Ops.

Burroughs Small & Medium

Honeywell Level 60 Ops.

Univac 1100 & 9400 Ops.

COBOL G11 - City 2900 CONSULTANT - South London

**Your Contract Career Starts Here** 

Programmer/Analysts Immediate/Forthcoming Assignments

COBOL+IMS+OS-Herts PL/I+TSO+IMS-South Coast IBM COBOL - Paris PL/1+IMS - South Coast OS SYSTEMS - Holland IMS DB/DC - West London

BURROUGHS

RSX11 - Italy ASSEMBLER - Middlesex Please contact Richard Kaluzynski or Sue Gillam on: 01-491 4706 or

**Operators** 

158 OS/VS2 Ops. 18M 3/0-02 421 & HASP Ops. ICL System 4/72 & 50

IBM Data 100 IBM System 3 & 32 Ops. IBM 370 DOS VS POWER VS Ops.

Terminal Ops. IBM 360/370 DOS GRASP Ops. Various Contracts For further details or advice on these and other U.K. and European Contracts still in the pipeline, call Sue Smyth, June Mogg or Jane Asbury. NOW! on 01-491 4706 or 01-439 3411.

All vacancies are open to both male and female applicants.



Knight Computer Services Limited, 14 Old Park Lane, London W1Y 4NL. Staff Services Division of BOC Datasolve Group and a member of Computing Services Association.

01-491 4706

# Before we find you a permanent job, we'll give you the old third degree.

A lot of the men and women who come along to our offices leave them in a state of mild shock.

What they're expecting is a quick chat, a synthetic smile, and a new job.

What they get is an interview that gives them a fresh insight into their abilities and prospects in analysis, programming or operations, and that's conducted by someone who has knowledge of their area of work and experience of what it takes. For senior jobs, such an interview can last an hour.

Really, it's a case of being cruel to be kind. We'd probably make more money more quickly if we just asked you to fill in a form and then sent you along to a whole string of interviews in the vague hope that one of the jobs will turn out to be the right one.

But when we send you to an interview (and we won't send you to many), you can be sure that you stand a good chance of getting the job, and that the job will do things for your overall



An unusual way of doing business, per

But at least you won't come back an

start giving the old third degree to us.

Phone No. BOC Datasolve Group a

your kind of jobs our kind of peo

4 6

awarded a contract, in collabo- tions and counter accusations

the US simulation that "proved"

simulations of extrapolated test Perhaps the classic case was the Plessey doppler system

abounded about false computer

would not work at Brussels airport. Plessey, with the British The struggle for MLS approval highlighted what could become a growing problem in descome a growing prob

but Control Data chairman, William Norris,

the CASE alternative

dial-up modems on immediate delivery

"After encouraging our-efforts to establish the joint venture, the US government so long delayed licences to export the required technology that

Control Data last week

CDC chief hits out

pleaded guilty to violating US currency regulations and identified foreign government between 1967 and 1976. The company was fined \$1,001,000

## WIXKIAD **OPERATIONS**

Computer Personnel Consultants

## PRODUCTION SUPERVISOR

S. LONDON

Non-Shift

£4500

This is an excellent opportunity for someome currently engaged in either computer operations or data control, and seeking promotion into a non-shift supervisory capacity.

The successful applicant will lead three small teams working on data preparation, operating, and data control, and will be responsible for ensuring the smooth flow of production work through a busy data centre. He/she will require a solid computer background and a strong personality since they will provide the initial user interface.

The Company is one of the largest and most successful service organisations in Europe with a multi-million pound turnover. Users are served by a network linking major cities in the U.K. and the Continent. The South London data centre is easify accessible from Surrey. Kent, S.E. and S.W. London using either

## **UNIVAC OPERATOR**

W. LONDON

£4000+

We are seeking an experienced operator to take responsibility for running a shift within a fast moving and

The company operate a medium size Univac mainframe running under OS/3. There are good career prospects available to keen and ambitious people, and the present vacancy is ideally suited to someone with approximately two years experienced of OS/3 and who can display the ability and confidence to take

The successful candidate will join a friendly installation, where other banefits include 4 weeks' holiday, function vouchers and a discount scheme for purchase of company products.

#### **IBM RJE OPERATIONS**

LONDON/SURREY BORDER

To £3000 + S/A

We have variations for experienced professional staff at various levels in our

SYSTEMS ANALYST

rewarding career in a progressive and expanding

On-Line Enquiry, Point of Sale, Order Entry.

are programmed in COBOL and packages used

include O-PAC, Accounting IV and Mark IV.

Tel: Loeds (0532) 40265

Hepworth

TAILORING

We represent a International

nnovative approach to the

development of software

manufacturing company, based in Scotland which has a positive and

applications. One of the areas in

which there has been significant progress is quality assurance and the company now wishes to appoint a man or woman to head

up an energetic quality assurance project team. The main areas of

responsibility will be the provision

of functional direction, technical

guidance and co-ordination to a leam of programmers engaged in

the evaluation of new software

offers an extremely attractive

projects. To ensure that the correct person is appointed, the company

Systems installed or planned for the future include

Financial Modelling, Production Planning, Stock

Management and Remote Data Entry: Applications

Competitive sularies and fringe benefits are offered

CM Hickson, Group Personnel Manager HEPWORTHS Limited, Claypit Lane, Leeds LS2 8AP

and applicants should write or telephone for an

SENIOR SYSTEMS ANALYST

**Systems Programmer** 

salary level being determined by experience. Other conditions

include a 35 hour week, pension and life assurance schemes and

generous relocation assistance to this high amenity area of Scotland.

(PA Personnel Services Ref: MV45/6409/CW)

Initial interviews are conducted by

PA Consultants, No details are

divulged to clients without prior

permission. Please send brief career details or write for an

application form, quoting the reference number on both your

letter and envelope, and advise us if you have recently made any

other applications to PA Personnel

£7,000 +

**PA Personnel Services** 

127 George Street, Edinburgh EH2 4JN, Tel. 03 1-225 448 1

Are your horizons wide enough?

Our client is a major international organisation and accurrently seeking additional Congress Operations who will become involved with an international Remote Tob Letty network these tree into the Company Headquerters supporting to be that a Letter representational Remote to the supporting to be the Delical Minister.

Successful applicants will join a young and professional team, working on a two shot rola, and will be able to offer at least one year's experienced gained in no unwindment authority 145-17. At 1-2 protector

These positions carry an excellent commencing valury accompanied by a submatter compact through through the other including a non-contributory pension achieve and united turnes, so the pro-consupplement can leak forward to a secure and healthy future.

## DO YOU KNOW GEORGE?

BERKS

To £4300

**--** 01-353 0981

If you know George then let your acquaintance be the start of a long and emechang cares:

A leading organisation is always looking for competent operators to overcose their states of eather therefor the operators to overcose their states of eather therefor its organism.

This is an opportunity to join a team of computer professionals and work in the ensemble of extreme the workload is demanding and varied. Both operators and senior operators are sought with six to eighteen unneity operating experience

In reward for using your skills and initiative, attractive salaries are poul and conjude where it, is seen as payment for working within a three shift system.

24-hour answering service Please telephone for a confidential discussion or write to-30 Fleet Street London LCAY IAA

# P.D.P. MINI COMPUTERS BRISTOL

Due to continued growth both through new and existing contracts our clients Jenson Computer Systems, a software House specialising in the marketing and development of commercial "on line" systems for P.D.P. mini computers

#### Systems Support Analyst

To assist in the development and marketing of commercial software packages Jenson are particularly keen to recruit a Systems Support Analyst already having or with a specific interest in pre/post sales support.

Suitable applicants need not have had either mini computing or V.R.C. experience although this of course would be an advantage.

However, specific requirements will include previous design experience of commercial systems. Implementation of

experience of commercial systems, implementation of financial Systems would be of particular interest.

Selary — £6,250 + Expenses



## **Project Leader**

Required at middle-management level. Jenson wish to appoint an exparienced Analyst whose assential qualities will include both the ability of man management with the D.P. expense to autonomously control commercial projects.

jects.
Although prior involvement within a mini computing environment would be desirable commercial design and preferably programming experience would be of equal Salary - To £5,780

#### Programmers

A requirement exists for various levels of Programmers with specific emphasia on senior Programmers having previously had "on line" experience utilising mini computers.

Applicants already having DEC/D.G., RSTS, using BASIC+ or File Tab would be able to command higher

Serious consideration will be given to main trame or VRC Selary — £3-£5,500

9A Princess Victoria Street Clifton, BRISTOL 8.

#### WEST YORKSHIRE ANALYSTS TO £5500

PROGRAMMERS TO £5100 Our clients are a major ungineering organisation hamed at Wast Yorkshire, and tooking to recruit a number of DP staff to help develop the computer installation into a major asset to the user departments ANALYSTS are required with varying amounts of expanses in enther

commercial or manufacturing systems and salaries will vary according to experience from £4700 to £5500. PROGRAMMERS are required with a minimum of twolve mouths COBOL and preferably some PLAN or ASSEMBLER knowledge Salaries according to experience from £4400 to £5100.

Conditions of employment are very good including substantial holiday More details and early interviews by telephoning



DAVID FISHER on 0422 58231 (DAYTIME) or 0532 861887

Computer Recruitment Balifax (0422) 58231 Queens Road Mills, Halifax

# Software Engineers

Advance and be recognised with Solartron Our continued expansion programme our commune expansion programm, and planned development have created excellent opportunities for Software Engineers to share this success story. We are based in pleasant country surroundings where housing, shopping and schooling are readily available.

We offer competitive salaries and attractive company benefits which include non-contributory pension scheme, a really thriving sports and social club plus the opportunities to advance your career in a

Engineers to share thre success story.
It is desirable that applicants should possess a degree or equivalent in
Engineering/Computer Sciences together
with one/two years' relevant experience
within an industrial programming opportunities to advance your career in a stimulating environment with our young vironment. The job function will entail the

development and design in Assembler Code (initially PDP if and LSI if range) or high level language programming to produce general purpose programmes Engineers are also sought to become nvolved in the support of current Software

vital company.

Make what is probably your best
move so far, by writing with brief but
sufficient carser details or telephoning to
Tricle Davies, Perspand Officer, Solartron
Electronic Group Limited, Victoria Road,

Farnborough (0252) 44433

Solartron

#### & Eurocom Data Limited A member of the National Wesiminster Bank Group

LONDON-MANCHESTER-LEEDS-BIRMINGHAM

SALES EXECUTIVES Circa £7000 + car

Eurocom Data Ltd. is a fact growing international Computer Output on Microfilm durant providing services through 5 centres in the U K and 6 further centres in the U K and 6 further centres in imable candidates are birely to be successful VRC Salesmen who have a good torking knowledge of Computer and Business Systems, and have consistently inchesed Quots

PROGRAMMERS

We need analysts and programmors to help us develop and sell this new technology. You will be required to give technical support to the sales team by following up their leads conducting systems surveys and implementing program or conventiones to COM. Hell your time will be apport utilizing our own PDF11 to D4s and other part interfacing with the customers' maintaine computer, which after a experience in all the manufactures designant operating systems. You will have head at least two years programming experience in COBOL and you offer a standard surgest and programming experience in COBOL and We offer a standard survey of about 64.600, on a scale ment of 6.600 plus tended allowance and excellent things benefits after a quality of plus.

Applications to

The Personnel Manager EUROCOM DATA LIMITED 3 The High Street, Ricksmanworth, Herts.

COMPUTER STUDIES

icy will exist as from Soptember next for a

## PERIPATETIC TEACHER

to be attached to a consortium of schools in Birmingham to act as a Hoad of Department of Computer Studies. The city has on-line computer terrorrals in most of its secondary schools and will be making rapid progress in the near future with the installation of micro computers in education. The post is rated up to Salary Soste 4, dependent on qualifications and expendice.

Applications by terror in the first instance to

The Director Birmingham Educational Computing Centre c/o Matthew Boulton College Hope Street, Simingham #5 75A

BIRMINGHAM CITY COUNCIL

Are you going round and round in circles in a job with limited scope? Do you have skills and . talents that can't be utilised where you are?

Can a Software House like Square One satisfy your needs - we'll try to help you find the answer at our next Open : Evening in London. It will be an informal gathering where you can talk to some of the people who work for Square One and find out about the

Company and its projects

Come and have a chat over a beer and sandwich on Monday 15th May between 6pm and 8pm at 150 Regent Street, If you can't make it or need more information, then ring Anne Truelove on 02405 75231.

**Open Evening** 



# Systems Analyst

#### Midlands

c. £6.000

We have been retained by a well known international organisation to recruit a Systems Analyst to join the team developing commercial applications. The Company, with a very sophisticated installation, are currently working on on-line data collection and enquiry systems and plan to install real time applications using minicomputers.

The successful candidate will be an experienced systems specialist with a financial or manufacturing background including some time spent as a programmer. An ability to liaise with users is essential.

This is an excellent opportunity for a person with potential to advance with an expanding group. The salaries, which are negotiable, are above average and the Company offers excellent terms and conditions of employment, including assistance with relocation where appropriate.

Early interviews can be arranged in the Midlands.

In the first instance please contact:-

Jim Baker, JAMES BAKER ASSOCIATES, International Personnel Consultants, 16 Maddox Street, London W1. Telephone: 01-491 4478.

# **PROGRAMMERS**

reasonably priced. We manufacture a display layout video terminal for use in the wo manufacture a display layout video termines for use in the printing and newspaper industries and wish to appoint two installation programmers with duties including input/output customisation of our terminals by table and software modification and assembly level programming. Experience of phototypesetting and DEC-PDP11 computers would be an advan-

tage. We sell in the export market and opportunities are available for overseas travel.

If you feel you have the necessary experience and want to work in a challenging environment offering attractive salaries, please write or telephone:

The Managing Director, Xenotron Limited Vinces Road, Diss, Norfolk 1922 3HH Telephone: (0379) 4580

# Senior Analyst/ Programmer

Iran Air requires a Senior Analyst/Programmer with a minimum of five years' programming and design experience on mini-computers, preferably IBM SYS/32, on financial applications. Based at Piccadilly the position offers much scope for travel and in the conversion and development of an on-line accounting package.

We offer a good competitive salary with many fringe benefite, working conditions are excellent and there are valuable travel privileges.

Please write with personal and career details to the Personnel Manager, from Air, 73 Piccadilly, London WIV OOX, Telephone 01-491 3658,



#### **SENIOR SYSTEMS PROGRAMMER**

PROGRAMMERS-DATABASE SUPPORT

FORTRAN PROGRAMMERS

ASSEMBLER PROGRAMMERS

PLEASE TELEPHONE FOR AN APPLICATION FORM.

# TELEPHONE: 01-767 0611

#### **COBOL PROGRAMMERS** CROYDON

With a minimum of one year's experience. You will be based at the regional headquarters of an international company developing systems for a variety of European countries. The programmers will become part of a project team developing applications for all aspects of business activities. The working conditions are excellent with a splery commensurate with ability and experience. Eurobeon Vouchers, four weeks' holiday and contributory pension scheme.

Telephone Personnel Department, 01-686 8844 for en appointment, or write to Rohm & Heas (UK) Ltd., Lennig House, 2 Meson's Avenue, Croydon CR2 3NB,



#### **APPOINTMENTS** LIMITED

Computer Personnel Consultants

#### **SYSTEMS & PROGRAMMING MANAGER**

S.W. LONDON

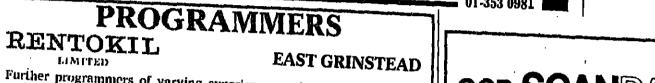
An international organisation with computer centres at home and abroad is seeking a Systems & Programming Manager for their installation in S.W. London easily accessible from the Surrey and Kent countryside.

Whilst the person appointed will be given complete responsibility for existing systems the main area of activity will be controlling small-project teams developing a range of new applications from feasibility to successful

Candidates should have a COBOL programming background coupled with a successful record of analysis gained in a commercial environment. Whilst experience in a similar capacity would be a distinct advantage applications from Senior Analysts able to demonstrate managerial skills and a successful record in the estimation, control and implementation of projects will also be considered.

In addition to first-class conditions of employment the Company offers an excellent commencing salary. A

24-hr. answering service Please telephone for a confidential discussion or write to: 30 Fleet Street London EC4Y IAA



Further programmers of varying experience required for mixed batch/ on-line applications on ICL 1902T 64K disc/tape and ICL 1500 configurations using COBOL, PLAN and CDE.

Conditions of employment are generous with fringe benefits which include Contributory Pension Scheme, Profit Share, Free Staff Restaurant and Staff Discount. There is an active Sports and Social Club. Situated on the Kent, Surrey and Sussex borders, East Grinstead offers

pleasant and varied living and recreational facilities. Salary up to £5,000 p.a.

Write or telephone: A. Appleby Rentokil House Garland Road East Grinstead West Sussex Tel. E.G. (0342) 27171

# SOUTH LONDON/ CROYDON/SURREY

ARE YOU AMBITIOUS? DO YOU WANT TO WORK FOR A GROWING COMPANY?

Superdrug have rapidly expanded from 1 shop, employing 3 people to 75 shops, employing over 1,100 people, and has a continuing growth pattern.

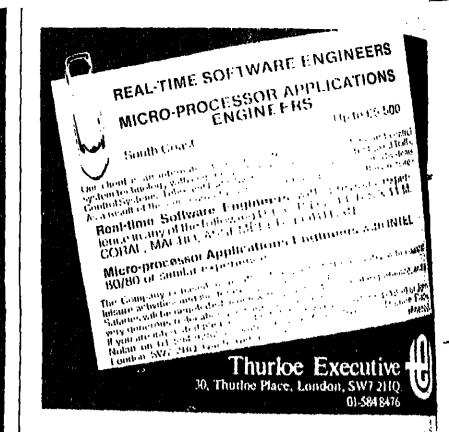
Our Computer Department is also growing to cope with this expansion.

We now need a No. 2 for our Department. This person should be young and have RPGII experience. The department itself is still quite small so there is complete involvement with the work on our System 3/10 and plenty to prepare for our System / 34 which is on order.

The salary will be around £5,000 per

Please contact:

Mr. Howard SUPERDRUG STORES LIMITED Felnex Trading Estate 190 London Road Wallington, Surrey, SM6 7EG Tel: 01-669 2151



# OCR SCANDATA

SUPPORT ANALYSTS Up to £6000 plus car

OCR Scandate is the UK subsidiary of one of the world is leaders in the exciting and rapidly expanding field of document reading and key-to-disk systems, particularly in banking and Imancial applications. We are now fooking for self-starting Support Analysts (men or women) able to take an active technical into in pre-sales presentations, benchmarks, demonstrations post-sales installations, special software development customer training.

Applicants should have significant business systems and programming experience, ideally on minis, and should be willing to travel to customer visualisations throughout Furape.

lesse apply in writing or phone European Support Managor OCR Scandate Ltd. Queons House, Holly Road, Twickenhan m TW1 AEW HORTH WEST THAMES REGIDNAL HEALTH

REGIONAL COMPUTER SERVICE SYSTEMS DEVELOPMENT OFFICER (Scale 23)

SALARY SCALE ES. 196 - EB. 047 PER AHAM FINGLUDING LONDON WERHTING AND SUPPLEMENTS)

Ifm et and the first of the fir	
and the second s	1.0
the state of the section of the section is a section of the sectio	1 : 1 : 2 - Mark 4.7
The company of the co	. 4. Au 61270"
The street are the street as a second street as a s	n' Jeanne
Product of the produc	2 mm g m ( 13 M)
And the setting of the company of the set of	7.4
A referent as a conservation of the second and the second as a sec	4 11 THE
Langu Mah Arhanda Kuringarang perunangan dan Kalungan Balangan Bal	13.
Studies Pater es Secon Ba.	

Application forms and foother personales from the Regional Personal Offices the Property West Front Helium Helium Authors 40 Feetle, the French Leader W2 30R (delephone Mr. 11 192 Fort, for the 1811 talumble by 1812 Mps. 1818 quinting receivemental X18.CW 11 14. Applicants from a neighbor the sense and the street of the st

# Computer Systems Professionals

Rank Nerox, one of Europe's leading Companies in the field of control of the and before tribed handling, wish to recrnit three computer systems profess in behavior of tribed by retrothe behaviorating Systems team at their Engineering Group Headquarters of Miles in Keyners, Procking Sandhites.

Systems Consultant . c. 太7,000

For this position we need a highly motivated self states who will respond favourably to the challenge of Applying a dynamic and accommobile environments.

Applying a dynamic and accommobile environments. working in a dynamic and accountable on the challenge of working in a dynamic and accountable on incoments.

The successful applicant will have significant responses belief to the planning design and construction of a personnel of the planning design and construction. The successful applicant will have significant response blittles in the planning, design and traplantant are a successful applicate which well perform a key mode, below in the management of mulcinational endounced and mulcinational endounced by the management of the manage

The position densities assemble to be assemble asperlement combined with analytical kills. Experience of eliginees in analytical kills. Experience of eliginees ing bills of married and changs content applications would be advantageous, but satisful and changs content around the provided where necessary.

Applicants should be advanted to degree level, preferably in the engineering securities discipline, and have at least 7 years relovant data processing experience.

Systems Analysts c.£5,500

to by would be with the confidence in his and indicated and/or 

ingineering Chamb fibri gene pare was can other a stir allering the salate of a small brogst-fenal come of the contract of the confider afforded by a large ment means.

You should be prepared to and within Europe and the United States of employment and excellent the process of animalica with re-ligation (e.g., regions).

Action

If you are inducted in the  $(1/2\log n)$  , in the  $(1/2\log n)$ Place Committee Books, Fig. 31. Two Systems Analysts are required to work on Irvintening Design and Financial Management reporting. Notes the property of the systems with the espected to bring a wide trager:

Systems Analysts are required to work on Irvintening Design and Financial Management reporting. Notes the property of the systems of o

RANK XEROX

# WEST YORKS

## ANALYST/ **PROGRAMMER**

to £3,500

A programmer with approx. 2 years' experience, seeking chance to move into systems. Total involvement in a wide range of applications, including liaison with users, low level language an advantage.

PLEASE RING OR CALL IN -- WE ARE HERE TO HELP YOU IN '78

#### **SENIOR SYSTEMS ANALYST** TO £5,500

A key position in an expanding department control of small enthusiastic team. Major planned developments include warehouse/ despatch, product explosion and management systems.

#### **SYSTEMS ANALYST** to £4,500

Self-starter with ability to use own

Full involvement in analysis design and implementation of major new systems. Real time systems experience an ad-

#### THE **BENEFITS**

Small team, make own decisions Promotion from within. Involved in a wide range of projects Real time

Subsidised BUPA Self/Wife Subsidised canteen. Relocation assistance

#### PLEASE CONTACT

73/75 ALBION STREET, LEEDS 1 PHONE: IRENE ROGERS 0532 36622

INTERVIEWS CAN BE HELD LOCALLY

**LEEDS** 

#### BERTRAM COMPUTER PERSONNEL **MANCHESTER BIRMINGHAM** SHEFFIELD

A Division of BERTRAM PERSONNEL GROUP LTD.

COVENTRY

#### **Development Programmers**

Hertfordshire up to £7,000 +

The software development group of this highly progressive computer terminal systems manufacturer are expanding their team of programmers The work involves long-term development of operating software incorporating data communications networks and micro processor technology. A sound knowledge of ASSEMBLER and one other language is essential. Successful candidates will enjoy a delighful working environment, an interesting mix of practical involvement and the definite possibility of career progression in the group.

Generous relocation package is offered together with up-market salary. Contact: Mike Creamer

#### Software Programmers -Minis/Micros

Herts

to £7,000 This is an exciting opportunity for experienced software professionals to join an expanding organisation which specialises in the application of Computers to industrial process control and automation. Ideally applicants should have more than a casual knowledge of software in the areas of Compilers, Assemblers, Interactive Languages, Communications and Real-Time operating systems. This is a high technology environment with a customer base ranging from petro-chemical, pharmaceutical, and steel companies to public authorities.

Excellent salaries and conditions of employment are offered and relocation expenses will be paid wh

Contact: Margaret Stevens

Analyst/Programmers

c. £5,000 A large international manufacturing organisation is expanding its data processing department and has a requirement for two Analyst/

Programmers to join the development group. Candidates must have at least two years experience as a programmer. preferably with COBOL on a mainframe, and have been involved with the design of commercial systems. Knowledge of on-line or real-time techniques would be un indvantage.

The company can offer realistic salaries and a real career opportunity. Contact: Jim Baker

#### **Technical Author**

up to £7,000 Our client, a U.S.A. manufacturer of intelligent terminal systems and associated equipment, seek an experienced Author to join their documentation group, which provides comprehensive software manuals. The successful candidate will be one who can work without supervision. enjoys responsibility, and whose technical competence commands respect. The position would ideally suit a programmer or analyst with a flair for documentation and an interest in technical communication. Friendly working environment, exectlent relocation package, and good

#### Contact: Mike Creamer Systems Analyst/Project Leader

North London

Continued expansion and development within our clients organisation has created a vacancy for a capable Analyst to join a product development team. This small but highly motivated team has total responsibility for the design, implementation and support of a major Accounting package. Applicants should have a PLA programming background and have been involved with systems development for some three years. Experience of commercial applications would be an advantage. This is a key appointment within a well established bureau therefore salary will reflect the importance of the post. Contact: Margaret Stevens

#### Trainee Customer Support Specialists

Our client, an international computer manufacturer, has opportunities for staff to join a training scheme to become Customer Support Specialists. The course which will be in London includes software. applications and operations activities, is expected to last six months. and will have a heavy practical content.

Applications are invited from people with about nine months programming experience preferably in a commercial environment (probably using COBOL). A business studies qualification such as [1N]) or degree in economics, low, business studies, systems analysis, would be an asset

This is an exciting chance to join a professional organisation and receive first class training. Subsequent assignments will be available in most parts of the UK. Excellent salaries and large company benefits

Contact Jim Baker

For further information on any of the above vacancies please contact the appropriate consultant. If your qualifications do not match the above positions but you are seeking other opportunities please contact us anyway. JAMES BAKER ASSOCIATES. International Personnel Consultants

16 Maddox Street, London W.1. Tel: 01-491 4478

The D.P. Recruitment Specialists for the Midlands/West Country areas

#### MANAGEMENT

COMPUTER MANAGER required by our client and engineering group to implement and control the installation of a Honeywell 62 Socies computer Practical expenience with engineering production and financial applications essential Area Staffs Satery up to C7,500 Ref. M18.

Support MANAGER for mini computer manufacturer. At least 5 yrs. in commercial systems. Previous mini-support experience an advantage. Area Burmingham. Satery circle C6,000 plus company car. Ref. M13.

System AND PROGRAMMING MANAGER. Must be experienced with IBM mainframe and mini hardware. Languages Assembler and Cobol, using batch and real time At least 6 yrs. in DP Area Burmingham. Setary to C7,000.

ner. m 19. COMPUTER MANAGER roquired for a systime mini installation with on-line terminals, At least 1 yr. basic plus under RSTS. Some aupervisory experience an advantage. Area. Birmingham, Salary. circa £4.600.

#### PROJECT LEADERS/ SYSTEMS ANALYSTS

PROJECT LEADER et least 4 years' plus experience in Commercial Systems. On-line oxperience an edvantage. Area: Coventry. Salary to £6.000. Ref. SA24. PROJECT LEADER. Responsible to Group Date Processing Manager, stleast 2 years' Production Planning and Control Systems. plus a formel programming background in Cobol or RPG Experience of a small meintrame and terminals required. Area: Worcester. Salary to £6.500. Ref. SA098.

SENIOR SYSTEMS ANALYSTS. At least 5 years in D.P. Preférably apperienced on ICL Hardware developing Rost Time. Area Leicester. Salary to £6.500. Ref. SA132.

SYSTEMS ANALYST, et losst 3 years' in Programming and Analysis. Area: Bristol or Somerset. Salary to £6.000. Ref. SA131.

ANALYST/PROGRAMMER. 2 years' plus experience in Cobol and Plan plus some Analysis. Area: Nottinghamshire, salary: c£4,600. Ref. SA130.

SENIOR SYSTEMS ADVISOR. Required by mainframe manufacturer for pre-and post-salas work. At least four years in Commercial Systems Including a working knowledge of Cobol or RPG 2. Area. Midlands Salary: c £5,750 plus generous car allowance and oxpenses. Ref. SA129.

SENIOR SYSTEMS ANALYST, et least 4 years' plus experience in Commercial Systems with knowledge of Cobol or Mini Computer Languages. Area: Birmingham. Salary: to £6,000. Ref. SA128.

SENIOR TECHNICAL ADVISOR required by Major Meinframe manufacturer, at least 5 years' systems experience with an in depth knowledge of most Commercial explications. Area: Birmingham. Solary c £6,000. Company car supplied, Ref. SA126.

PROJECTS LEADER/PROGRAMMING. At Jeast 6 years in D.P. with

supplied, Ref. SA125,
PROJECTS LEADER/PROGRAMMING. At least 6 years in D.P. with
Online and database experience. Area: Lincolnshire. cE6,000. Ref. M24
SEN10R SYSTEMS ANALYSTS, Owing to expension a number of positions
have arison, candidates should have a degree plus On-line or Database
expensions. Area: Sirmingham. Salary to £6,800. Ref. SA123
DATABASE DESIGNER at least 3 years programming experience with in
depth knowledge of IMS. Area: Birmingham, Salary: to £6,000. Ref. SA105
TECHNICAL SUPPORT PROGRAMMER. Must have communications
experience on tCL hardware. Area: Bristol. Salary. £6,500 plus bonus. Ref.
P283

SENIOR COMPUTER AUDITOR. At least 5 yrs in DP. Practical experience in auditing with a background of systems and programming. An accountancy qualification an advantage. Area Birmingham. Salary circa £6,000 plus car.

PROGRAMMER/ANALYST, At least 3 yes, working in Cobol. Area

SENIOR PROGRAMMERS/ **PROGRAMMERS** 

PROGRAMMER/ANALYST, at least 2 years experience in Cobol and Assembler plus knowledge of at least 1 Mini Language Area. West Bromwich. Salary to £5,000. Ref. P243
CONSULTANT PROGRAMMER required by a Time sharing bureau. Degree required plus experience of programming in APL, Area: Midlands. Salary. c£4,500 plus car. Ref. P242
PROGRAMMER/ANALYST for Venteck Datapoint Mini. 1 year plus experience in Datashare, RPG II or a similar language. Area: Birmingham. Salary. c£3,500. Ref. P238
PROGRAMMER/ANALYST required for Sustams. 3 installation working.

experience in Datashare, RPG II or a similar language. Area: Birmingham. Salary. CC3.500. Ref. P236

PROGRAMMER ANALYST required for Systems 3 installation working directly under Computer Manager. 2 years plus RPGII. Area: Birmingham. Salary: cc4,000. Ref. P235

PROGRAMMER Required by a Birmingham Finance House. 1 year plus Cobol. Area: Birmingham. Salary range £3.500-£5.500. Low interest mortgages and loans available. Ref. P234.

PROGRAMMER S. 2 years plus experience in Basic+ or experienced in other languages and willing to be re-trained in Mini Languages. Area: Nottingham. Selary: £4,000-£5.400. Ref. P232.

SUPPORT SPECIALIST required by Mini Manufacturer at least 1 year experience in Assemblar. sres: Birmingham. Salary to £5,000. Ref. P227

PROGRAMMER, 1 year plus PL/1 or Assemblar, knowledge of Circs or IMS an advantage. Area: Birmingham. Salary to £4,500. Ref. P205

PROGRAMMER, 1 year plus PL/1 or Assemblar, knowledge of Circs or IMS and advantage. Area: Birmingham. Salary to £4,500. Ref. P205

PROGRAMMER ANALYST. 2 years' plus experience in IBM Cobol and Assemblar using 005/VS with Cics. Area: Birstol. Salary: Neg. Ref. P189.

PROGRAMMER. 1 year plus Cobol. Area: Northamptonshire. Salary: to £3,500 plus subaldised mortgage. Ref. P186.

PROGRAMMER, 2 years' plus Cobol, preferably IBM. Area: Leclaster Salary to £4,500. Ref. P175. to C4.600. Ref. P176

OGRAMMER/ANALYST, at least 3 years' experience in Cobol, Fortran or eco, plus On-line experience. Area. Birmingham. salary to £5,600. Rof.

P160.
ANALYST PROGRAMMER, at least 2 years' programming in Basic + Dibot or RPG11. Area. Stalts. Salary. to £5.5K, Ref. P32.
CHIEF PROGRAMMER, responsible for a small team of programmers. At least 3 years' Cobol. Area Leicestershire. Salary £4,750, Ref. P245.

#### **OPERATIONS**

knowledge of Data communications and trans Worcester or Staffs Salary: Neg. Ref. 092

CHIEF OPERATOR, at least 8 years experience on IBM 360/370 range under 05, VS, MFT, CICS and RJE Terminals. Area Staffordshire. Salary to £6,600. Ref. 0100. METWORK OPERATOR, at least 4 years' experience in IBM flandware knowledge of Data communications and transmission with RJE network. Area

OPERATIONS SUPERVISOR, Days only At least 2 year expansion on 370 DDS/VS including JCl App 24 year plus Area Wolverbampton Salary 14,500 Ref 0105

OPERATIONS ANALYST. Gund knowledge of BBM operating systems including JCL At least 1 yr in a sambu position. Area Staffs Salary circu 65,000. Bot 0100

SENIOR OPERATORS & OPERATORS with at limit 2 years inspection on SENIOR OPERATORS & OPERATORS with at lines (2) years, respective on IBM 370 under OS, VS or MVS. Area Waterstanding Scharping Ref. 092.

DATA 100 OPERATORS, at least 12 months, respective on toperating a terminal or maintening Atom Remarks of the Computer OPERATORS required for full owns, clear. Chellenham Reddicts, West Brontwich, Covenity. Grantham, Bornington Tencester, Wolverhampton, salary range 13,000 t 4,000.

RC COMPUTER OPERATORS, Burnington, Stoke Tennester Covenity, Wolverhampton, Salary range (3,000 t 4,000.

HONEYWELL OPERATORS, Burningham, Welverhampton, Chellenham, palety range 63,000-64,000.

#### GRADUATES

Are you a graduate this year? If so we have a member of cleants who are recruiting Graduate Programmers and Analysis for the Mullands Areas, belary range £3,000-£4,000.

We have many more D.P. positions on our imposter in all areas of the Midlends/West Country

Contact: Graham Aston, M.E.C.I.

MARTINS COMPUTER SERVICES. First Hour Western House.
Opposite Albany Hotel, Smallbrook Queensway Birmingham B5 4HQ
telephone 021-843 2111. 24-hour answering service. Evenings and weekends
021-454 0331.

We are now able to interview until 6.30 p.m. and Saturday morning by



#### RESERVATION SYSTEMS T/P - DATABASE - MINIS

## PROJECT LEADER

(LONDON or BRISTOL)

to £7,300

#### SENIOR PROGRAMMERS (BRISTOL) to £5,800

PSL is a systems house supplying turnkey systems to companies in the UK and Europe. We are setting up a group to develop reservation systems using Honeywell Level 6 mini computers.

A PROJECT LEADER is required to develop and implement a system for a client in Central London. It requires excellent Man / Machine interface, and yet must be capable of high transaction throughput in a 100% secure environment.

TWO SENIOR PROGRAMMERS are needed to develop transaction processing systems. Based in Bristol they will be leading members of our systems centre and will develop projects, for use throughout the UK and

Initially please contact ANDREW SANSOM on



326 Upper Richmond Road West Liondon SW14

Telephone 01-876 7861

#### BARR AND STROUD

## **PROGRAMMER ANALYST**

**GLASGOW** 

We are a well established specialised engineering company with a wide range of precision, optical and electronic products.

We are looking for a Programmer/Analyst to work on Production Control and Bill of Material Systems. The work will involve collaboration in the design and programming of these systems or in the selection and implementation of appropriate packages.

Candidates should have some experience of Factory Control Systems a knowledge of RPG 11 and that ICL 2903 or 1900 is desirable.

Full details of age, education and experience affould be submitted in writing to

The Personnel Manager Barr & Stroud Limited

#### COMPUTER MANAGER

SALARY circa £5,500

equired by a reputity expending subsidiery of a public company ne stremeniupaji

\* Analyst/ programming experience, preferably COBOL \* Abalty to control small computer staff

# Pleasent working conditions
# Good prospects within the company/group.
# The opportunity to control an excuting new com

T. C. DAWES SOS Hureau Ltd.

86 Great Horth Road Tel. Hatfield 60321 Hatfield, HERTS.

WYRE BOROUGH COUNCIL **Borough Treasurer's Department** Appointment of

SENIOR ANALYST/

**PROGRAMMER** Salary S.O. 1/2-£4,759-£5,512 Inclusive of Supplements

Applications are invited for the above tool from persuins and secure systems experience and a programming background which includes Lucid and so RNG.

The successful applicant with take responsibility for a present development from meetingston, and must be capable of leading a sould team of analysis purpose and negotiating with representatives of user departments. Local Guestinskip of the contest of the strategy purpose and responsible but not expense.

The Council operates an ICL 280.3 computes with EDS 6 s / 30'+ 0.0 5 segretaed by D U. The Council would be prepared to council at the properties of housing appropriate case and segretaes with be grant if

accommodation and sestance turnings the cost of remains argument of the appropriate cases. The Borough of Wyre is situated on the Tyrite Costs and includes two seated result and a large neral arm of a scance beauty metuding the Standale Felia. The Borough Treasury is at Flootwood.

Treasury is at Flootwood.

Applications stating use, advection, qualifications and experience and quadrative reference should be forwarded as the Seneugh Treasurer, F.O. Sex 1, Torrib Help, Flootwood by 1 first Stary, 1875.

#### Computer **Programmer**

· San Control

c. £4,000 p.a.

Our client, one of the world's feating manufacturers of diesel engines based in the Greater Many houser area. ires an additional Programmer for their newly installed ICL 2903 Compi

Currently being used for salaries, sales and pure lease ledger work, the Company now with to utilize the Computer fully on production and quality content. A Senior Organisation and Mothods Managor with the responsible for bre entror or nontembro-co bna gninnale

Applicants, who must have a communical 2 years. experience in industry, or service to industry with Cobal anguage, preferably ICI, 2903, will work as part of a sees eam consisting of Senior Programmer and time Training

Usual established company from the medical on sensory.

Please contact: June Standish: (061) 236 8401, est. 52 Projectiona Mappissations from both men and

women are welcome

MANAGER-SENIOR PROG A wide variety of applications is run by our clients, in cloding scientific systems, using maintraines and more: Formbody with PLO, BAL IDOST and CORAL

c£6.75K + bonus SENIOR S/A Slough c05.76K + bonus SENIOR B/A Slough Some 2 years expensive including COBOL pro-gramming) and a previou ability to specify, design and implement on information processing system is required in this ICL 2003 covironment.

To £7K

advantageous

To £5.5K SYSTEMS PROG A leading software organisation profors ASSEMBLER and JCL expanence to work on powerful main sys terns, primarily with civil ungineering applications.

168 Finchley Road, London, NW3 6HP



#### 

#### **HESTAIR STANHAY LIMITED**

#### **RPG II PROGRAMMER**

We are looking for an experienced RPG II Programmer to work on our IBM machine at Ashford. Currontly, this is a disc based System 3/10 but there are plans to change to a System/34 with vdu a

The ideal candidate will have 4-5 years' experience of both language and machine and will have worked on both production control and accounting systems. We do not have, or intend to have, a large computer staff and therefore the qualities of adaptability and initiative are important. The salary is negotiable and is unlikely to be a problem for the right person.

team of three other analysts.

COBOL PROGRAMMERS

**FREAL TIME SPECIALISTS** 

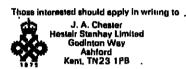
Real Time Systems Division based in Central London.

willingness to pick up new machines and languages is assential.

COBOL or PLAN.

**SENIOR SYSTEMS ANALYST** 

Hesteir Stanhay, a part of the Hesteir Group, is a major manufacturer of procleion soed drills and other agricultural machinery. Both the group and the company have expended rapidly over the past few years, and further expansion is planned





An opportunity has arisen for an experienced and articulate Systems Analyst to progress

into a more demanding and responsible position, leading and co-ordinating the work of a

The installation comprises an ICL 1903 machine running under GEORGE II, and an extensive Real Time system utilising DRIVER and COMMS MANAGER. Experience in any

You should have at least 4 years total DP experience, 2 years of which should be in Systems

Analysis, and during this time you ought ot have installed 2 major systems. The work will

cover many different projects, will involve a wide area of systems and applications, and will

give a great deal of experience and satisfaction. Altogether a position with plenty of scope,

One of the world's largest insurance companies situated in the heart of the West End has

telecommunications network, and thus will provide valuable experience in this lucrative

The company offers a high starting salary, and a first class benefits package which includes

Flextime, free lunches, a Non-Contributory Pension Scheme, plus a Subsidised Mortgage.

One of this country's most respected software houses has a number of opportunities in their

Production Control, Military Systems or Communications, gained on Minis or Micros would

Positions exist at all levels from Programmers and Analysts through to Consultants.

An ability to meet and communicate with clients, an outgoing personality and the

If you believe that you could comply with the above specifications and would like a

rewarding position with an excellent salary and prospects, ring us immediately.

Assembler or Fortran experience in any of the following areas: - Message Switching,

several vacancies for programmers with a minimum of 18 months' experience. These

positions would be ideal for programmers who wish to progress shortly into Systems

The hardware in use is an IBM 370/168 running under OS/VS, with a large

challenge and rewards, the high salary reflecting only a part of the total package.

of these areas would be highly desirable, as would a programming background in either

#### **COMPUTER SYSTEMS** DEVELOPMENT Ampex, a worldwide leader in magnetic re-

cording and storage technology, needs a Manager of Computer Systems Development (male or female) for its European Operations.

In this position you will be responsible for the selection of minicomputer hardware for Ampex Regional Sales Offices and development of software for sales/order entry and financial reporting and control systems.

Ideally your background should include:

- -Experience with either IBM, Data General, DEC or Hewlett-Packard Minicomputers -Experience in Cobol Programming
- -Familiarity with Data Communications Proto-

Initially you will spend several weeks at Corporate Headquarters in California. Your permanent base will be in Reading, England with extended assignments on the Continent.

We offer an excellent compensation package. Please submit your resume with salary require-

J. Van Der Dussen **Ampex International** Acre Road RG2 00R

AMPEX

#### COMPUTER PERSONNEL APPOINTMENTS LTD. Career Specialists and Consultants **D.P.MANAGERS. SYSTEMS ANALYSTS.** PROGRAMMERS AND **OPERATORS** flands, Northern Countles and Scotla For application forms apply to:-65 New Street, Birmingham B2 4DU. 021-643 0951 or Tel 01: 723 5334

£6000 to £7300

Reference PG 19/1

Reference JC19/2

Reference SD19/3

C£4500 plus mortgage

#### AT THE REPORT OF THE PARTY OF T **WE NOW HAVE THE BEST JOBS!**

#### **OPERATORS/SHIFT LEADERS** ANALYST PROGRAMMER To £4000 Inc.

CW 19/1 Patricia.

**OPERATORS** 

To £4500 inc.

international company CW 19/2 Patricia.

OS experience though. CW 19/3 Patricia.

**OPERATORS** 

DATA EXPRESS HOUSE

**HEATHFIELD TERRACE** 

Recruitment Consultants

01-958 6138 evenings

PROSPECT PLACE

CHISWICK W4 3BR

01-995 3883 or

£4000 inc.

W. LONDON

N. LONDON

SNR. OPS/OPERATORS

£4000 to £5500 inc.

yy. ! If you are into DOS/VS then this 2-shift

A major IBM 370/OS user is offering

really excellent perks including high salary

and paid overtime plus paid removal ex-penses. You must have a minimum 1 yrs.

Experienced ICL GII & GIII operators are urgently required by this go-sheed commercial organisation. Perks include 21 days hols, Flexitime, subsidised canteen and a normal 3 shift system.

**£6000** CROYDON

Here is a vary **nice** job. A 2-shift system having ICL 1900 equipment using **GII**. Vecancies exist for 2 Operators and a Shift Leader. A nice firm involved in Consumer A small but progressive international In-surance compuny is actively seeking an Analyst Programmer who wishes to extend their present 2 yrs. + 18M COBOL ex-Products Active S.S. Club. cheep BAR perience by learning the useful MK Paraguage. Excellent career prospects usuel company perks. CW 19/5 Annette.

#### **PROJECT LEADER** c. £6300

system, no nights, will be attractive to you. They provide a high basic salary and 4 weeks' hols, and you will work for an SLOUGH If you like taking charge then here is an ideal opportunity to extend your supervisory experience, and build upon your IBM COBOL knowledge in this DOS/VS, CICS, DL/1 instellation. This major Industrial organisation offers an active s.s. club 4 weeks Hots, and a NON C.P.S. CW 19/6 Annette.

#### SYSTEMS ANALYSTS To £6500

MID ESSEX

A major manufacturing company is in-volved in expansion plans within their D.P. department and requires experienced commercial analysts especially those with real-time application involvement. Although ICL equipment is used your actual machine experience is unimportant. This firm offers generous relocation ex-penses and 4 weeks' Hols. etc. CW 19/7 Annette.

#### SYSTEMS ANALYST To £8500

NR. WOKINGHAM

A major user of large Univac equipment with an exciting realtime Database application to develop requires comparable experienced applicants. Usual large company parks and relocation expenses, etc CW 19/8 Annotte.

#### FREELANCE PROGRAMMERS To £260 p.w.

Apply NOW for the latest vacancies. IBM, HONEYWELL, DEC & ICL programmers welcome. Earn a summer holiday paid break plus an attendance BONUS. Ask for the Contracts Officer on 01-995 5485.

SYSTEMS PROGRAMMER

City

A large and highly respected financial institution is seeking a capable and imaginative OS or OS/VS Systems Programmer to work in their City based installation. They are using two IBM machines -- a 370/148 and a 370/158, running under OS/VS in both Online

(Date Base) and Batch Processing modes, hence a background in either discipline would The ideal candidate would have some operating experience, with a general programming background, preferably in ASSEMBLER or PL1, as well as a minimum of around

18 months in OS or OS/VS Systems Programming. Since there is a heavy commitment In the Stocks and Shares field some exposure in this, or in any other financial area, would

Salary will be totally dependent upon ability and experience and will not prove a limiting factor for the right person, so if your experience tallies in any way please contact us at

## PL1 PROGRAMMERS

Reference PG 19/4 C£5000 plus mortgage

experience to join their expanding DP department in the city. They currently operate a twin IBM 370/138 system, running under DOS/VS, and have a comprehensive communications network, so any knowledge of CICS would also be an

In addition to a competitive starting salary and excellent career prospects, the company offers interest free Season Ticket Loans; free Life Insurance an Annual Bonus scheme,

and a 3% Mortgage.

A major financial organisation needs programmers with 2 years good commercial

#### FORTRAN PROGRAMMERS

We have outstanding opportunities for all levels of Fortran Programmers with a background in any of the following:-ENGINEERING

TECHNICAL SUPPORT

GRAPHICS FINANCIAL APPLICATIONS

Positions exist within well known software houses, bureaux, manufacturers, and international engineering organisations; all offering good selaries and benefits combined with excellent career prospects.

Reference SD19/6

Reference JC19/6

PETROCHEMICALS

**OPERATIONS RESEARCH** 

Datascene Recruitment Ltd Sceptre House 169-173 Regent Street London WiR 7FB



24hour answer phone

# THIS IS UP YOUR STREET +



UXBRIDGE — MIDDLESEX SYSTEMS CONSULTANTS

SYSTEMS ADVISERS

OPPORTUNITIES FOR TRAVEL
THROUGHOUT THE UK

# THIS IS YOUR CHANO TAKE A POSITIVE STEP FORWARD IN YOUAREER DEVELOPMENT

WE ARE ACTING FOR ONE OF THE LEADING U.K. GRO ARE ENGAGED IN LARGE SCALE REDEVELOPMENT OF THEIR IBM BASED SYSTEMS.

IF YOUR EXPERIENCE MATCHES THE FOLLOWING MENTS, THEN YOU SHOULD CONTACT US AND IN DOING SO TAKE THE FIRST STEP FORWARD IN MAKING ONE ( APPOINTMENTS YOURS.

- PROGRESSED THROUGH PROGRAMMING INTO SYSTEMS ROLE OR MOVED INTO D.P. FROM A PROFESSIONAL BACKGROUND.
- (b) EXPERIENCE WORKING WITH MEDIUM TO LAMBERCIAL APPLICATIONS.
- (c) BEEN USED TO WORKING WITH MEDIUM TO LABOUTER HARDWARE OR HAVE EXPERIENCE IN THE DISTRIBUTED PROCESSING ENVIRONMENT.
- (d) THE ABILITY TO COMMUNICATE WELL WITH AND OF USER PERSONNEL AND MANAGEMENT.

BRIGHTON — SUSSEX COMMENCING SALARY circa £7250

COMMENCING SALARY circa £6250

PLUS RELOCATION EXPENSES

TELEPHONE OR WRITE TO US NOW TO ARRANGE FOR AN INTERVIEWONDON OR THE SOUTH AS OUR CLIENTS WISH TO MAKE EARLY DECISIONS

RECRUITMENT AND CONSULTANCY SERVICES

Greenock House 19 Cuckfield Road Hurstpierpoint Sussex

RECRUITMENT AND CONSULTANCY SERVICES

Greenock House 19 Cuckfield Road Hurstpierpoint Susse Telephone 0273 833848

SPECIALISTS IN DP AND EXECUTIVE RECRUITMENT

SPECIALISTS IN DP AND EXECUTIVE RECRUITMENT

# Are you involved in improving productivity in IBM installations?



Training, Consultancy, Lecturing, Systems Engineering, Marketing or as an Analyst, Programmer or Shift Leader and wondering what your next stop should be in your carser

YOUR NEXT STEP depends on whether

BIS-Deltak is a young international company and part of the £5 million Business Intelligence Services D.P., management and software

Professional service-oriented team

 Personal development in the latest DP and training technology. ● Initial training in the U.K. and U.S.A. and later management and

Change to a career in marketing with rewards related to ability.

Marketing Consultants: D.P. training

Basic to £7,000 plus bonuses plus car:

meet them. You will be exposed to the latest in D.P. and training technology. If you meet our high standards, you will receive a basic salary between 25,000 and 27,000 plus company car plus bonuses which have already given Marketing Consultants consistent earnings into five figures. In addition you will have the benefit of our pension, disability insurance, funcheon youchers etc. management and software consultancy group. It has six years success in selling a comprehensive in-company training skills library using text, audio and tolevision. You will be aged 24 to 30, probably with a degree or similar qualification. You will be highly motivated and disciplined and able to communicate well both in writing and orally with all levels in the D.P. department. You will enjoy analysing training needs in detail and implementing proposals to Applications are invited from both men and women. Interviews in London or Manchester. For details of these positions write or phone Shirley Learmonth, P.A. to M.D., immediately:

BIS-Deltak Ltd., 17-23 Stamford Street, London SE1 9NG Tel: 01-928 9511



How many plece parts in the FA Cup?

More importantly — are you experienced in production control and could you define the necessary systems.

If so you should talk to us about our specialist engineering client with a requirement for a Systems Analyst with a minimum 4 years experience.

The company wants a PROJECT LEADER at about £6,000, in WEMBLEY!

The installation is growing rapidly - new IBM 370 hardware, CICS, DL/1, shop floor data capture and CAPOSS E factory scheduling.

So make sure you join the winning team - put things together - now! CW 14-8J.

01-686 9693 (24 HOUR ANSAPHONE) | 061 236 2419 FAULKNER HOUSE, 19, PARK STREET, CROYDON, CR9 ITN | FAULKNER STREET, MANCHESTER, M1 4YD

CAPP ASSOCIATES SO Services LONDON AND MANCHESTER

NORTHUMBRIAN UNIVERSITIES
MULTIPLE ACCESS COMPUTER

**SYSTEMS** PROGRAMMER/ **PROGRAMMING ADVISOR** 

Applications are invited from gradu-ster in Jain steem of programmers working with two linked IBM com-puters. a 370 / 16B and a 360 / 87 Two operating systems are run MVT, shortly to be uppraded to MVS, and the Michigen Terminal System Opportun-tinas exist for working on the basic operating system, continuing graphics development or enhancing com-munications facilities. Applicants should have a good knowledge of IBM systems and an understanding of the needs of a community of research workers. ns are invited from gradu

ne of the following scales according to ge, quelifications and experience langs 1A E3,680-E6,178 or Range i 15,730-E7,308 per annum. Member-thip of the appropriate University

THE DISTILLERS COMPANY LIMITED YEAST AND FOOD DIVISION

**Computer Programmer** 

A computer programmer is required at the Devision's Research and Preserve train 1 of a later of tracket. Central Scotland. The computer department operates a threat-spectrum of the profession of the computer of early engaged on projects involving the storage and analysis of help laterances and fact of storage decisions are used.

Applicants should have at least SCE. Hit level mathematics on title. A level mathematical qualification and have a minimum of two years, groups are not present a control of the years groups are not present a control of the surcessful applicant.

The department is located in an attractive rural agreen at the  $t_{\rm eff}$  or the  $(t,t_{\rm eff})$  is the recordion areas of the Highlands and the elementary of Glasgow and  $t_{\rm eff}$  is  $t_{\rm eff}$ .

The Yeart Heasarch Manager he Distillers Company Limited Yeart and Fond Division

# 25 International Opportunities in Microprocessing for Software/Hardware Engineers

**Experienced up to £7500** 

Our European Software Technology Centre at Bedford is being expanded to handle work for the whole Texas Instrucustomers, and dedicated to delivering the right software at
opportunities in the microprocessor technology section offer is only required for the more senior positions.

Main responsibilities will consist of developing customer applications systems based around our TMS 9900 and TMS 1000 families of microprocessors. This will be undertaken largely at our Bedford plant, using the latest generation of hardware and software tools. However, travel around Europe and to the U.S.A. is highly probable. Success will lead to the possibility of transferring to similar jobs in Dallas and Houston.

Candidates, with a degree in Electronics, Computer Science, Mathematics or similar relevant subject, will be highly self

Graduates from £3500

Salary for experienced engineers will be negotiated up to £7500 dependent on ability and expertise; salaries for new/recent graduates will be from £3500. For all posts, there is a salary review efter 6 months service. First class benefits apply and include generous assistance with relocation expenses, where appropriate, pension plan, health insurance, profit sharing, assistance with obtaining mortgages, subsidised restaurant and lots more. dised restaurant and lots more.

For an application form, please write or ring, quoting ref. no. FY/301, to Ann Stevens, Personnel Department, Texas Instruments Ltd., Manton Lane, Bedford. Tel: Bedford (0234) 67466, ext. 3442.



TEXAS INSTRUMENTS

LICERTER POLYTECHNIC FACULTY OF BURNESS

Post No. 546 Lecturer in Data Processing Post No. 467 echarer in Computer

Post No. 56 Lecturer in Statistics SSLARY in merchance with the Bu-turn FE Report 13744-15883 per a

FO Box 142 Lettester LF1 9814 Tol (0433) 50181, Fater, 2303 Shitting the Full Science

HARROW COLLEGE OF HIGHER EDUCATION

PART-TIME LECTURERS

required for afternion s September 1978 in PROGRAMME DATA FOLESSING

Declarate to D. J. Ohver De marketers of Business and Northwest Free Harrison, MAR. 378- Tel UR.#84 4419 ent

**Processing** Limited

#### Experienced

users during the daytime.

for overtime during the weekend.

relocation costs where appropriate.

Please telephone Sylvia Walton, or write to

**The Company** 

#### Computer

#### Operators

Salary £4,000 p.a.

Que to further expansion, experienced operators are required to join our efficient and hard-working Operations Team.

**Operators and** 

Senior Operators

Beds up to £4650+overtime ICL 1900 and 2900 Installation

Due to exceptional growth, our client will be installing an ICL 2960 system in August to operate alongside a 192K 1903T. This means

new opportunities and first-class career development prospects for

The operating system is GEORGE 2+ which will also be run on the 2960 using DME. Maximop and Dataview are supported for terminal

A three shift system operates during the week with ample opportunity

Our client is a medium sized engineering company employing 2,000

from the M1 motorway and easily accessible from population centres

such as Luton and Bedford. Housing is attractive and plentiful in the

**Castle Computer Services Limited** 

271 High Street, Berkhamsted, Herts, HP4 1BW, Phone: (04427) 73161.

people. They have modern premises in rural Bedfordshire, not far

area and the company will provide generous assistance with

**Computer Data** 

The configuration consists of two large ICL System 4/72's, 24 EDS60's, 14 MTU's, 4 printers, 2 card readers, 30 local VDU's and 4

Ideally, applicants should have 2 years' 360/370 machines.

hree-shift working (Monday-Friday) is in Jur office is located very close to the nain-line station (London 43 minutes and

Alan Meriton Operations Manager COMPUTER DATA PROCESSING LTD. Oakfield House Perrymount Road Haywards Heath

Haywards Heath 59158

ipc

O.E.M. SALES MANAGER -EUROPE

> **Quota Earnings £18000+Car** (Base Salary£12000+)

Surrey OUR CLIENT is a subsidiary of a profitable and leading U.S. based O.E.M. supplier of computer peripherals and small business systems with a world wide turnover of some \$200 million.

THIS KEY APPOINTMENT offers the opportunity for an experienced sales professional to lead a successful and substantial sales team already established in the U.K. and Europe at an exciting time in this Company's development. The position is based in Surrey.

APPLICANTS must be able to demonstrate a substantial management track record in O.E.M./small business system sales gained in an environment where sales opportunities have been both created and negotiated to a profitable conclusion with major U.K. and European companies. The ability to speak German and/or French will be a considerable advantage. Age 32/42.

EXCELLENT TERMS OF EMPLOYMENT include 4 weeks holiday and unusually generous sickness and pension scheme.

To discuss this EXCITING APPOINTMENT further, applicants should write, enclosing career details to date, quoting ref: CWO81, or telephone David May, Advising Consultant on 01-486 8991.

102 Blandford Street, London W1H 3HH Telephone 01-486 8991

Snamprogetti Ltd

## Computer Programmer

petro-chomical contracting with its U.K. bass in Basingstoke. Following continued Company expansion there is a vacancy for a programmer to join our existing small

Applicants would be required to operate a data entry terminal to an IBM 370/158. They should have a good knowledge of IBM JCL and at least two years' experien in Cobol or PL/1. Knowledge of Fortran and/or Assembler would be an asset. The primary function would be to modify and as necessary would be desirable

This is an opportunity offering negotiable selaries, paid overtime and an attractive ension scheme. Free membership of **BUPA.** Relocation assistance.

Applications to Personnel Manager. Bnamprogetti Limited, Telford House Houndmills, Basingstoke, Hanta. Telephone: Basingstoke 61212

#### SALESMAN COMPUTER STATIONERY

Circa £4,000 + Car + Bonus

We seek an alert young paraon, 24-34, from an operations/programming background to self dur business forms in City plus North London.

The work will be interesting and rewarding. If you are tired of talking to machines why not try talking to people

Apply for interview.

London Alexander Perligtew (1869) Ltd. ATLAS PRINTING WORKS Coatbridge, Scotland MLE 3RG for the attention of the Sales Director

## Any Mini, yes! Any micro, great! **Intel 8080, WOW!**

That's how we feel about you, round at Real Time Mini's place. You're enough to get us to get you anything up to £10k.

Or even more. (Depends what you've been up to lately).

Our clients - manufacturers, software houses and users alike saying: "You got them before, so now do it again!"

You could be scientific or commercial.

With manufacturer or software house experience — one year, two With Assembler or higher.

And with degree or lower - but not too low Sex: male, female, you name it.

Locations: London and Home Counties. If you're not there already,

Some of the application areas.

Micro processing, word processing, process control, message switching, flight simulation, radar systems, automated telex systems, communications, dignostic programming, video typing systems, composition and

Any of these -- and several other application areas -- we're ready to talk about now. All you have to do is dial 01-836 9719 or 9882 and ask for Beryl McLaren.



(REAL TIME MINI'S PLACE) Suite 43, 12-13 Henrietta Street **Covent Garden, London WC2** 

# Computer Operator

We have a vacancy for an experienced Computer Operator in our Data Processing Department

The duties will involve the operation of our recently installed Honeywell 66, to Computer. You will be required to work a simple shift pattern covering the period from 7.30 to 23.30. Own transport will, therefore, be necessary. We require a person with approximately eighteen months experience on a medium to large machine. Training in the operation of a Honeywell machine will be given where necessary.

Starting salary will be within a range £3227-£3747 (inclusive of pay supplements and a shift allowance): discussions are taking place on a general salary increase under current incomes policy which will be effective from July. Relocation expenses will be paid where applicable.



Applicants (male or female) should write or telephone for an application form, quoting reference CW/143CC to:— Pauline Carville, Assistant Personnel Officer,

Independent Broadcasting Authority, Crawley Court, Winchester, Hampshire, SO21 2QA

#### **Programmers** Bristol from £3,985-£4,930

Telephone: Winchester 822270

- in a modern office at Bedminster Down, Bristol
- \* on an ICL 1903T/2960 DME
- If you have either: one years experience of COBOL and/or a degree or equivalent qualification

Either phone Bristol 32251 Ext. 18 or write to the Personnel Manager, 15-23 Oakfield Grove, Clifton, Bristol BS8 2AS and ask for an application form AF/1. This should be completed quoting Vacancy Number 354/78/CW and returned by not later than 26 May 1978.

> Central Electricity **Generating Board** South Western Region Oakfield Grove, Clifton, Bristol BSB 2AS



#### **Telecomputing**

Oxford London Amsterdam

# **Programmers**

(COBOL or PLAN)

The growth company in online fransaction processing systems requires programmers at all levels to join project teams working on clients' applications. revious online experience is not essential.

felecomputing started in Oxford in 1974 and has more than doubled in size each year. We are now providing advisory, training and implementation services for installing online computer systems around

When you join Telecomputing you are taking the opportunity to develop your own career in a growthcompany. We have an informal atmosphere and expect to pay attractive salaries and bonus.

Please write or phone Telecomputing, Seacourt Tower, West Way, Oxford. Tel: Oxford (0865) 723621

DEPARTMENT OF CLINICAL CHEMISTRY WOLFSON RESEARCH LABORATORIES QUEEN ELIZABETH MEDICAL CENTRE, BIRMINGHAM SCIENTIFIC PROGRAMMER

responsible for routine and research computing within this laboratory. Hardware, upon which with a based, includes a PDP 11/40 RSX-11M system, a PDP 11/10 RT-11 Multilasse system. a DG Nova 2 RDOS and a DG Nova 2 RTOS system. Applicants should preferably have a scientific degree atthough two A fevals, one of which is in Mathematics, will be considered Same experience of Fortran Programming and interest in operating systems and file management is destrable Starting salary for graduates will be 13148 pa nating to a materium of C3832 pa Starting salary for A' level students is £2524 using to C2641.

Application forms and further information available from the Personnel Office Ouese Divabeth Hospital Edgissation, Birmingham 816 27H 021-472 1311 Th Closing dete for application is 22nd May.

CMG is a rapidly expanding Computer Service Bureau with operating subsidiaries throughout the UK

#### **CUSTOMER ACCOUNT SUPERVISORS**

£5000-£7500

Sound hostness knowledge is assented as the work not only involves the supervision of production and the quality control of the business systems being processed on our commuters, but also involves detailed alson with our clients on the use and extension of computer systems within their organisations, All opplicants must have practical experience of computer

principles. Banafits include four weeks holiday and huicheon ouchers, non-contributory life assurance and BUPA schemes in addition to a profit sharing bonus

These posts offer a wide variety of assignments and up to our demanding yet highly rewarding standards, pleaso write or telephone for an application form, quoting ref; C/1, to: Janet Gothard,

CMG (West End) Limited, Tel: 01-686 8251

#### TRAINEE OR **JUNIOR** Programmer/

**Systems Analyst** 

CI.1/AP.3 £2,428-£4,072 (Ref. B271)

Applications are involved for the above yest or the Bergrigh 1n waver is Connected which uperates an ECL 1903T Computer returning under the Groupe Coperating system with terminal and V D US.

Applicants should have 5 G C E with 2 at A found standard and stoody have undergone formal featuring or CORCL Knowledge of Pc Ab would for an extraction and polymerate with also be considered and teaming will be

Applicants with the property of the phono the Computer Development Manager Of 484 3333, Ext. 3286 Closing date 23rd May, 1978

Application forms from Assistant Chief Frequency (Application Lower Hall Breaks) BRI 15B 1at 01 464 3334 [see 143])

LONDON BOROUGH OF BROMLEY

# WEST YORKS

# **SYSTEMS**

Minimum 2 years' Analyst experience in a commercial installation.

involved in a wide range of systems project development. The promotion prospects will arise from the formation of further project teams.

**VACANCIES DUE TO** SUSTAINED **EXPANSION** 

TRAINEE **ANALYST** 

Minimum 18 months' programming in a commercial language. Our client offers comprehensive training facilities plus excellent career opportunities.

c. £4,250

The successful candidate will be involved in a wide range of new projects

2000年,1828年1月

WORK ON IBM MACHINERY IN SMALL TEAMS WITHIN A PURPOSE BUILT COMPUTER CENTRE

#### RELOCATION ASSISTANCE

25% discount on consumer products. Subsidised restaurent. Non-contributory pansion scheme

# BERTRAM COMPUTER PERSONNEL

73/75 ALBION STREET, LEEDS 1 PHONE: IRENE ROGERS 0532 38622

INTERVIEWS CAN BEHELD LOCALLY

PLEASE RING OR CALL IN - WE ARE HERE TO HELP YOU IN 78

LEEDS SHEFFIELD 0742/738783

MANCHESTER 061-236/4593

BIRMINGHAM 021-643/4433

COVENTRY 0203/52171 ICL SEN OP x 2

**OPS CONTROLLER** 

CITY E4000
A minimum of 2 years Groups Jespannica sequence to join this major brancal concern. A 2 shift system is in operation and the successful applicants will transfer to New Range 2000 hardware after a short proced. Benefits include sub-incorpage and L.V.s. An arcallent opportunity eners for an operator with a good 2903 - 4 or 1900 background to good a banking origination. The wishflation comprises of an ICL 2903 and a Eric 1 into an 2-shall system. Buretts include subsidiated transportunity and acceptance of the energy of the energy

ICL SENIOR OP

ICL 1900 ICL 1900 ICL 1900 ICL 1900 ICL 1900 IBM 370 IBM 370 IBM 370 IBM 370 IBM 370 IBM 370 18 mths 62 +

S. Essex
S. Middz
H. Midda
R. Midda
R. Midda
W. Lon
S. Coast
Lon/Harto
Midda
Lon/Sy/Mx
N. AC. Lon

IBM OPERATORS

6 Minutes Exp.
Humerous within organist for mutations sporting people wishing to progress to Operator. Smooth Operators with IRM 360 - 170 on Egyptim 3 experiences with IRM 360 - 170 on Egyptim 3 experiences withing to sport in London and the Homo Countries.

**ICL OPERATOR** 

ICL 2960/70/80 OPS Ratinating offered to ICL 1900 operators prepared to influent emission of London Proference given to inperators with prior principles of VME 8 Salary depondent upon experience.

COMPUTER TWO THOUSAND

01-637 3265 217/218 Tottenham Ct. Rd. W1P 9AF Personnel Consultants Lic No. SE(A)463

# **Technical Support Specialists**

London and Birmingham Up to £7,500 plus fringe benefits

At Sperry Univac we're looking for more highly technical software-orientated people for our Series 90 Central Technical Support Group. We need people to specialise in the following areas: V77 Mini Computer.

UTS 400 and UTS 700 Intelligent Terminals, ODS 2000 Data Entry l'quipment. VS/9 Virtual Operating System, OS/3 Technical Question/Answering Service. Appropriate experience would include 3 years work with equipment or software

similar to at least one of the above, plus a good working knowledge of at least two of the following languages – BAL, COBOL, RPG 11, FORTRAN, BASIC. The people recruited will travel throughout the UK and will also attend courses and sentinars elsewhere in Europe and/or the

> For further information telephone Margaret Atkins on 01-965 0511 or write for application form to: Heather Green, Sperry Univac UK Headquarters, Sperry Univac Centre, London NW 10 8LS.

# Pl/Iprogrammers one new project atteranother... andnotreelancing

Read that again . . . . and no freelancing it says. This is Altergo, the most professional software house in the UK and thirty other countries around the world.

We stand by our reputation for technical excellence and commercial; integrity, with a nicely overflowing order book to back us up. Which means that we can offer you a secure long-term career as a PL/1 expert.

One new project after another, A constant variety of problems and situations. The challenge to your ability regularly renewed. A wealth of personal development. All as a permanent feam member, perhaps shorlly as a team

Shortly, because we've made individual recognition an inherent part of our policy. Along with regular staff meetings, a professional training school to give you all the extra knowledge you'd like to have, and budget that lets us: pay people in equal proportion to their expertise AND potential.

What you must do is give us an enthusiastic commitment to our technical and commercial development Make a decision that you'd like to be part of the leading PLA consultancy. And then come and talk to us about what you've done, what you'd like to do, and how much you should be earning.

You'll find that we can offer assignments all over the world. Or in exactly the area you're in now. We can put you on applications just like the ones you know, or give you something entirely different. It's a remarkable fact that we can tailor your career pretty much to your circumstances.

Contact us now, and we'll see you in London, Birmingham or Manchester. If anyone you know prefers to work in COBOL, Assembler, IMS of TP, we could usefully talk to them too.

Contact Roger Perkins, Altergo (Personnel) Limited, Warwick House, 38 Soho Square, London W1V 5DF. Phone 01-734 9681 or 049-481 2713 after 8.00 p.m

LICENCED AS AN EXPLOYED LACTENCY





Gemini Computer Systems Ltd., the UK headquarter company of the CAP Gemini Sogeti Group, require for their London office Analyst / Programmers, Senior Programmers and Programmers to work on the projects indicated.

F

The Company offer, in addition to a good basic salary, free life and medical insurance, paid overtime: on-site allowances if applicable, and the chance of assignment to any one of their 25 European sister companies or, after a visa qualifying period, to the USA.

# Analyst Programmers Senior Programmers and Programmers

The projects to which you could be assigned include:

★ COBOL (370) A real-time T.P. Banking project.

LONDON

- \* PL/1. To enhance a team developing an insurance and MIS applications system.
- \* COBOL (1900). To join a team working on an on-line and batch merchandising / invoicing system.
- COBOL (360). To work with a company of Management Consultants implementing their total D.P. Systems.
- PLAN and/or COBOL for DRIVER software adaption and

Neg. to £7000 basic + bonus

For further information please write to Gemini Computer Systems Ltd.
Gillingham House
38-44 Gillingham Street
London SW1V 1HU or telephone Charles Patev

01-828 6634 (day) 01-647 2392 (evening) or Jenny D-H 04946-4579 (avanings)

#### **MYRIAD APPOINTMENTS** LIMITED

Computer Personnel Consultants

#### PROGRAMMING MANAGEMENT

#### LONDON

To £7,100 + relocation

Our client is a well-known manufacturing organisation with offices in London, convenient for commuting from North East and South East London, Essex or North Kent.

The installation houses an IBM 370/138 under DOS VS which supports a teleprocessing network using SHADOW. There are on-line, real-time and database systems in operation and further development utilising these techniques is planned.

We are now seeking an experienced DP professional who has the ability to manage, motivate and train the staff under their direction.

Suitable candidates will have a programming background together with some knowledge of IBM hardware; it is likely that they will have used one high and one low level language. The most important quality is the ability to manage, and technical training will be available as required. In addition to a competitive salary the position carries an attractive benefits package. Generous relocation expenses are available where applicable.

> 24-hr. answering service Please telephone for a confidential discussion or write to: 30 Fleet Street London EC4Y IAA

#### SENIOR ANALYST/PROGRAMMER (c. £5750) SENIOR PROGRAMMER (c. £5250) MITCHAM, SURREY

A loading manufacturer and distributor of surgical instruments and related products requires professional EDP staff for its Head Office computer installation based at

Currently developing a new ON-LINE ORDER PROCESSING SYSTEM ON AN ICL 2904, our client can offer many opportunities for programmers with COBOL experience — not necessarily ICL — to broaden their knowledge by working in small toams which have responsibility for all aspects, from initial investigation to final

BENIOR ANALYST/PROGRAMMERS should have at least 4 years' experience in commercial systems and be capable of developing new systems from feasibility to

SENIOR PROGRAMMERS should have had at least 3 years' programming Call or write. Colin Shingleton

#### Meteor Computer Consultants Ltd.

Barry House, 20-22 Worple Road, Wimbledon, London SW19 4DH Telephone 01-946 4424



ICCH

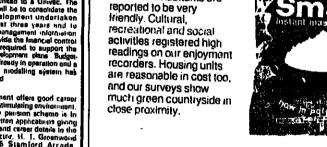
ICCH, International Commodities Clearing House,

#### ACCOUNTANT MANAGEMENT SERVICES

Up to £4,750 + Car

01-353 0981

in old-established finance currently based in Astron-Under-Lyne currently with 20 branches in the North and will considerable plans for expension considerable plans for expension a commercially mind. onsiderable plans for expansio squires a commercially mind, coountant, not necessarily qualifies o head up a new Management Sorvic legarimant. Only man or women we recital experience of computer less yeteme need apply. The company or work and apply and apply the property of the which is shortly to be uplated by a University of the plated by a University of the plated by a University to the past terminal continuation treats. y lask will be to core e fast three years and



experience and qualifications. At least 24 days, heliday + public Smash

Niall McCormack and his colleagues will be standing by to welcome you on the dates shown or ring them on 024-548 (west at 198 OF HIGHER Information

holidays. Sports and social

facilities. Staff descounts

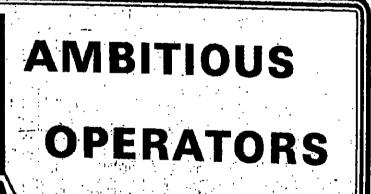
They need experionced SYSTEMS ANALYSTS (2 years + ) AND

lowork on online and batch systems SALARIES ARE UP TO \$6,825 PER

ANNUM PLUS PROFIT LINKED BONUS

Where you start depends on

PROGRAMMERS (1 year + IBM knowhow)



c. £3800

aged that the successful applicants will have at least 1 year's operating experience on an IBM mainframe, preferably in a DOS/VS environment. Knowledge of GRASP/POWER and CICS would be an added edventage, in house and external training facilities are used extensively and career prospects are exhallent. provide a clearing and guaranteeing service to commodity markets in the U.K. and Overseas. They commodity markets in the U.K. and Quersess. They have a substantial investment in data processing, which currently consists of an IBM 370/138 and an IBM 370/148 utilising DOS/VS and supporting an axiansive CICS teleprocessing network. Because of business expansion and internet promotions, they are seeking to recruit additional personnel for their nurrent 3 shift everem.

Fringe benefits include staff loans, interest-free ticket loans, non-contributory pansion softems, free life assurance, luncheon vouchers and sports and social

DP RECRUITMENT LIMITED

Kent House : 87 Regent Street, London W1R 7 HF

Tel: 01-437 : 2062/3/4 (244 Hour Ansaphone) Senters
Association



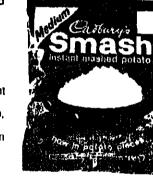
# **WE'RE BRINGING OUR LEADER**

Informal interviews 3 p.m. - 8 p.m. (no appointment necessary) Manchester Monday, 15th May. Grand Hotel, Aytoun Street. Liverpool Wednesday, 17th May. St. Georges Hotel, Lime Street. Leeds Monday, 22nd May. Dragonara Hotel, Neville Street.

A close encounter with Cadbury Schweppes could be just what your career needs right now. Our sensors have detected they have one of the most advanced (by earth standards) in-house computer facilities in what you earth people call the U.K.

Hardware includes 2 - IBM 370/158's + advanced TP equipment and many more quaint antiques. The centre is located

at Bournville a pleasant suburb of Birmingham. The inhabitants are reported to be very



OUTSTANDING OPPORTUNITY FOR IBM TRAINED SYSTEMS CONSULTANTS TO DEVELOP

#### INTERNATIONAL CAREER & REPUTATION

Our Client is considered to be the World's leading supplier of IBM -- compatible our chant is considered to be the world's teading supplier of the —compatible mainframes. They have achieved spectacular success in the US and Europe with their wide range of products and sarvices and are currently expending their operations throughout Europe; the Middle East and Africa.

To IBM-trained personnel currently engaged in pr ig functions, a senior appointment is availab. . BASED IN LONDON isibility for establishing pre- and post-sales su; port in the

This position offers the suitable candidate the opportunity to develop his expensive and reputation in the International market. A VERY ATTRACTIVE SALARY FOR THE RIGHT MAN, who should be interested in varied travel up to

#### We require candidates with the following:

\* Experience in MVS, VM/370, VS/1, OS and/or DOS/VS on large mainirames \* Ability to handle both pre- and post-sales support work and to communicate effectively with Clients in numerous countries (foreign language fluency is not mandatory but will be an advantage)

This is a care opportunity for the right man and we will be short-listing at an

Send confidential C.V. to the address below or Raverse charge telephone call to us (24 Hour answering service), quoting reference CW-ME

DPSC Group Limited, International Management and Personnel Consultants, Crown House, Mordan, Surrey SM4 5EU, England, Telephons 01-840 #311.



# Computer Recruitment

A division of ATA Selection and Management Services, requiliment consultants to Industry and Commerce since 1967

## CRISIS IN COMPUTER INDUSTRY

An acute shortage of qualified Analysts and Programmers throughout England and Scotland is causing great concern amongst Computer Managers.

As a result of investigation this concern seems justified. We have discovered that very high salaries, excellent career prospects and interesting project developments seem insufficient to arouse interest on the employment market.

Action decided on by ATA Computer Recruitment is for Analysts and Programmers to ring us and tell us what else they need to work for leading computer installations and manufacturers.

We have over 200 computer positions in Scotland, North-West, North-East, Midlands, South and South-West, and we need your help to fulfil this demand. Any indication of salaries at this stage is meaningless as our clients will quite simply pay what you are worth.

#### WANTED 200 COMPUTER PEOPLE THROUGHOUT U.K.

031-226 5381

MANCHESTER 061-832 5856

021-643 1994

0272 211035

CRAWLEY

**APPOINTMENTS** 

**Computer Personnel Consultants** 

on-job training and supervision.

a solution using on-line terminals.

MYRIAD

LIMITED

0293 514071

**SENIOR PROGRAMMER** 

**Problem Solving and Systems Design** 

A fast growing technical support team is seaking a potential team

leader capable of transleting user requirements into a working system. Following extensive training the successful applicant will

support the preparation and implementation of proposals using the

company's financial application packages. Operating from their City

offices he/she will be responsible for junior staff, capable of giving

Ideally you will have at least three years' programming experience

in a commercial environment. Machine and language are not as

important as the ability to assimilate a problem and design and test

The Company, a major U.S. Bureau, has been active in the U.K. for

nearly six years and has recently commenced a planned expansion of their marketing operation. Internal reorganisation has created

this new support function and the person appointed will be the

potential deputy manager of this growing department.

SOUTHAMPTON 0703 37555

#### **ENGINEERS AND MATHEMATICIANS**

**Dynamic Simulation** and Control

Babcock & Wilcox (Operations) Ltd. require Engineers and Mathematicians to work on engineering problems associated with boiler dynamics and control

Using mathematical modelling techniques and hybrid and digital computers, the successful applicants will be responsible for the development of simulations for the prediction of plant performance and the subsequent transient analysis of the systems.

A degree or equivalent qualifications and experience in one of the following areas is required: Mathematics, Modelling, Anologue/ Hybrid Computer Programming, Digital Computer Programming using a Simulation language, Mechanical/Control Engineering The salary is negotiable.

Please apply giving full details of experience to: Mr. D. M. McLaren, Babcock & Wilcox (Operations) Ltd., 165, Great Dover Street, London SE1 4YB.

Babcock & Wilcox (Operations) Ltd

#### COMPUTER STAFF

Salary range - £3,200-£4,900

Our Client is a major industrial organisation. Vacancies now exist at Computer Operator and Senior levels for shift operating teams at a computer bureau located in South Yorkshire. The work offered is varied and

challenging, involving the use of several mainframes of differing manufacture. Considerable use is made of modern telecommunications network facilities Successful applicants will have

experience of ICL, 1900 using GEORGE 3 and/or IBM 370 VS1. For appointment at Senior level, experience of both is required, although alternative additional experience (e.g. of large scale bureau or lecommunications operations) may be

Salaries, including shift allowances, range from £3,200 to £4,900; starting level will depend on experience and

Enquiries and applications should be sent to the address below. (Reference 750 must be quoted on your envelope, Enclose separately a note of any companies to which your application should not be sent.)

> Ronald Fairbairn, Everetts Recruitment, 10 Greycoat Place, London SW1P 18E

> > **EVERETTS** recruitment

## Computing in Education Administration

Middlesex Polytechnic is currently establishing a new team to develop espects of a Polytechnic-wide computer-based management information system and corporate model. The initial emphasis is on resource management, covering students, staff, buildings and finance. The Polytechnic has a DEC system 10 computer and all applications will be developed and operated on-line. Ultimately a central database will be desided with which all the applications will interface.

Senior Analyst/Programmers SO1/2: £5044 - £5797 p.a. inc.

Middlesex Polytechnic

24-hour answering service Please telephone for a confidential discussion or write to:

30 Fleet Street, London EC4Y 1AA

2. 使是大学的基础的基础的基础的基础的基础的图片,但是是是

Outstanding opportunities for

Infotech Operations Ltd., the industry standard in operator and operations management training, require an

# **Operations Consultant**

up to £8,500

Applicants must be experienced at a senior level in the field of computer operations and be capable of advising DP management on development and training programmes for all levels of operations staff.

This is a senior position within Infotech Operations Ltd. giving tremendous scope for future development with an established company which is growing rapidly in size and reputation.

John Blake Director Education and Training



# Infotech Operations Ltd Nicholson House Maldenhead Berkshire SL6 1LD England

hone: Maidenhead 35031 (STD Code 0628) Telex: 847319

#### MYRIAD **APPOINTMENTS** LIMITED

Computer Personnel Consultants

#### SENIOR PROGRAMMER (Team Leader)

**MIDDLESEX** 

Due to the imminent upgrade of their IBM mainframe and an intensive schedule of systems development during the coming year, our client is seeking an experienced Programmer with knowledge of either COBOL or RPG II. c £6,000

- The position offers the opportunity to gain experience of:
- \* Project Control \* Team Leading of 3-5 Programmers
- Program Development using On-Line Terminals Program Design and Specification

The Company, situated in HAYES, offers an excellent starting salary with a Company firmly committed to computer system development. RELOCATION ASSISTANCE, SUBSIDISED CANTEEN, and an ATTRACTIVE PENSION SCHEME are also in the package to be offered to the

> 24-hr. answering service Please telephone for a confidential discussion or write to: 30 Fleet Street London EC4Y 1AA

#### HALFORDS COMPUTER INSTALLATION IS GROWING

# HAVE YOU THE POTENTIAL TO GROW WITH IT?

Our business is heavily dependent upon our ICL1903A installed in 1971 We will replace it this year with a larger system to support our planned expansion into the 1980's to include

- Merchandise control through 600 POS terminals
- Management information systems using on line facilities.
  We need to invest in people and will welcome your experience in

#### SYSTEMS - PROGRAMMING - OPERATIONS

f you have anthusiasm and potential to grow with us so much the better

#### SYSTEMS **ANALYSTS**

Around £5,000

& SENIOR **PROGRAMMERS** c.£4,000/£4,500

**OPERATORS** & SENIOR **OPERATORS** Around £3,500/£4,000

WHERE ARE WE?

experience. It will be an advantage if you are familiar with retailing. Starting salary will depend on your experience but should be around £5,000. Contact Tony Russell or John PROGRAMMERS At least 18 months COBOL

You should have 1-2 years

you have more (at least 3 years) and the ability to supervise a small team, you will be interested in the senior job. Salaries again depend on experience, but will be around £4,000 and £4,600 respectively Contact Barrie Walker

Again, 18 months' experience (3 years for senior operators) including job set-up and file control. Applicants must be prepared to work shifts, Your initial income will be around \$2,600/\$£000 (sepactively p.s. inclusive of all appropriate allowances Contact Malcolm Rebeiro (extension 115)

WHO ARE WE? We are Europe's leading retailer in the Auto, Cycle and Leisure markets,

The jobs are at our Head Office in Redditch, in rural Worcestershire, Birmingham and the West Midlands are all within

Staff discount scheme Pleasant working conditions - Subsidised restaurant - Relocation

Contect person parned on Reddich (0527) 27501 or write to himst flatfords Ltd., lokuleid Street Drive, Washford West, Reddich, Words, 898 DDE

MAGEORDS

A BURMAH GROUP COMPANY



#### **PROGRAMMER**

A programmer is needed to work in the Department of Civil Engineering, deve-oping programs for a wide variety of applications. These seem mainly from seearch activities within the department. A science-based training to degree level would be preferred together with some experience of FORTRAR.

Salary within scale 23.189 - 25.262. It is hoped that the initial appointment will be within the lower half of the scale. Further details and application form from Paul Johnson, Establishment Officer. Rof.

UNIVERSITY OF GLASGOW Department of Computing Science

#### SYSTEMS PROGRAMMER

Applications are moded for the freshold hyperene Conjugationer in the experience Computing Science. The Systems Programmer will be respected the fail the Bay 15-69 tunning of the Department is PDF 51 - 40 16-00 System and will past posterior long term development of the computing fail of each the Department. The System Programmer will also be expected to rainy out a quagrant process of research.

Applicants should normally possess a good to cone subject on the opering Shoot and preferably have had some relevant year to also research expressions.

The appointment will be made within the serge stands of the saley tradition Research and Analogous Staff (2 title CD 1 ft on the color of the empirished Analogous Staff (2 title CD 1 ft on the color of the empirished Analogous Apply prints to present with a 5 chains of Apply

Further particulars may be obtained from the Secretary of the University Court (Room 18), The University of Glosgaw, Glosgow G12 800, to whee applications (8 copies) giving the names and addresses of three relates, should be sent not later then 3 let May, 1876. in reply pleasy quote Ref. No. 41 30e



**DEMA GLASS LIMITED** Incorporating Thomas Webb & Sons and

DEMA

# SYSTEMS

Applicants will preferably possess a commercial background and must have sound experience of ns work from initial investigation to successfu

Our present method of operation is batch, but we shall be upgrading in the near future and developing on-line facilities. Experience of on-line systems would be an

Please write or telephone for an application form to: The Personnel Officer, Dema Glass Limited, Pottery Lane, Chesterfield, Derbyshire, S41 9BH. Telephone: Chesterfield 74201

## SOUTHAMPTON

**—** 01-353 0981

Linte of Sound and Vibrati

ege # teff erffum:a

CONTRACT PROGRAMMER

47 Esses Street, WC2

## MICRO PROCESSORS & MINI COMPUTERS

London & Midlends ANALYST/PROGRAMMERS

with at least three years' programming experience in high level languages, to work on interesting commercial applications. We offer challenging and rewarding prospects with an expanding company in the rapidly developing market for Micro and

Apply in writing to:

P. R. Daly & Co. Ltd., Butts Wead, High Road, Eastsote. Pinner, Middx, 01-868 7284.

## UNIVERSITY OF

kgeptarations are marked for MANAGER

## or the thate Audigus Service P or leading and Lound and Ville of Heavanth

Candidates strough bara paraneal or the operation of me

Sintary quale (13660-18178 or 16054 to 67038 per antum Instal salary will depend on Qualifications and expensive

Rushiteations any beginner.
Purther particulars may be obtained from O. A. S. Copland, The University Southersprom EQS ENK, in whom applications should be bent not lister than 30 May, 1978. Please quote referance 355/A/CW.

## RPG-11, W. LONDON TOP RATES X-Calibur Computer Barriot

## LORIEN COMPUTER SERVICES

**PROGRAMMERS** 

Start up to

Do you realise that some of the most attractive

programming vacancies currently available are with a

major U K. group of companies, located in Uxbridge?

minimum of 12 months' experience an unusually wide

Our client uses a variety of hardware including IBM and

ICL Mainframes, and a new 3031 is due for delivery this

autumn. In addition you may work on mini and micro

Our client provides a DP service to a major Food and

Leisure group. Because of the diverse nature of the

Data base applications.
 Sales Order Processing.

interactive and distributed processing techniques are

In addition to COBOL and PL/1 the company uses other

We would therefore like to hear from any career minded

Our client offers an EXTENSIVE TRAINING Programme

computer languages. Programmers develop their

programs using on-line facilities under VM/CMS.

programmer, regardless of language or hardware

experience to date, who wishes to progress in a

designed to develop your potential to the full. This includes language and hardware training in addition

to courses in modern programming techniques.

stimulating and challenging environment

Carrier State of

Accounting applications.
 Retail systems.
 Stock Control.
 Statistical & Financial Control

System. • Managerial Information Systems.

In addition to conventional batch processing,

group's activities the breadth of systems experience to

expertise is unlikely to be surpassed anywhere.

be gained is exceptionally large. This includes:

computers. Clearly the scope for you to gain hardware

These vacancies offer any able programmer with a

variety of work and a high level of technical interest.

SENIOR PROGRAMMERS

2 years' plus experience

PROGRAMMERS

1 year plus experience

Why look any further?

Range of hardware

Range of systems

being used.

Range of Languages

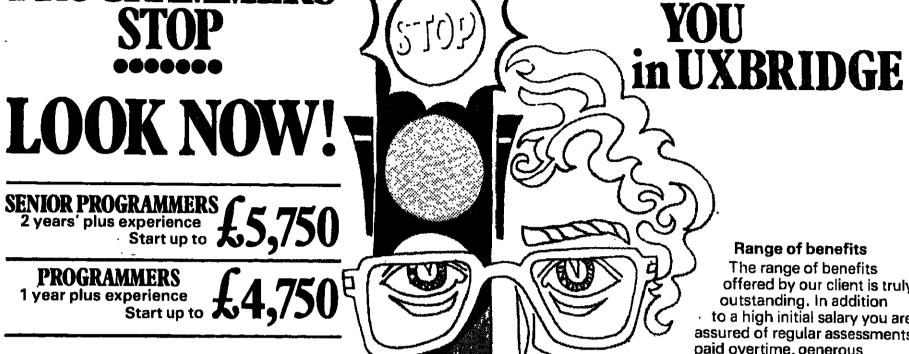






Servia Road, Leeds LS7 1N1 Telephone 0532 444185

Operating Systems:....



#### Range of benefits

The range of benefits offered by our client is truly outstanding. In addition to a high initial salary you are assured of regular assessments. paid overtime, generous pension and life assurance arrangements and free BUPA for yourself and your family. Relocation arrangements are very generous too, should you require to move.

So why not GO with a company that's going places? You can

GO where your work is recognised

GO where the hardware is of the latest kind

GO where there is variety and interest

GO where there is good training GO where real career opportunities exist

ACT NOW!

If you require more details simply phone LEN CRAY on Leeds (0532) 444185 reversing the charges if necessary. We'll be glad to take any details over the phone. Alternatively complete the coupon below and send it to **Lorien Computer Services** Limited, FREEPOST, LEEDS.

LS7 3YY. We'll arrange to meet you in LONDON or the NORTH. PERSONAL Name:....

	Address:	
Π	Home Telephone:	
	PROGRAMMING	•
	Experience to date:	
П	Languages Used:	• • • • • • • • • • •
: U	Hardware:	



OCS House.

# ald Computer Recruitment

A division of ATA Selection and Management Services, recruitment consultants to Industry and Commerce since 196.2

# REALISE YOUR POTENTIAL AND DEVELOP YOUR CAREER IN THE NORTH-WEST

Our clients are a group of companies manufacturing a diverse range of products with an annual turnover in excess of £24 million. They require additional personnel to make a substantial contribution to the on-line development programme.

hese positions, based on the edge of the Yorkshire Dales National Park, Forest of Bowland and within easy reach of the coast and Lake District, offer job security and satisfaction, promotion by merit and the opportunity to join a department at the beginning of their teleprocessing development plan.

SENIOR SYSTEMS ANALYST/PROGRAMMER

The Senior Systems Analyst/Programmer will have Project Leader responsibilities and will have developed and implemented at least one on-line system preferably utilizing 2903/4 hardware. A strong COBOL programming background is essential

and some experience of Team Leadership and user liaison would be beneficial.

#### ANALYST/PROGRAMMER

C£4,500

The main duties of the Analyst/Programmer will be to assist the Senior Systems Analyst / Programmer in the design of the on-line systems and the subsequent coding in COBOL to comply with the proposed schedules and standards

#### CHIEF OPERATOR

to £4,500

The prime responsibility of the Chief Operator will be to organise and schedule the work load in order to optimise machine loading and lay down the standards for the Operations Section. Whilst 2903/4 experience is extremely desirable, applications

The company provides an excellent relocation package which is made up of all legal fees including Estate Agents' fees, survey costs, full removal expenses, interim subsistence payments and disturbance allowance of 10% of annual salary

For further details telephone Ian Baker on 061-832 5856 or alternatively write enclosing C.V. to ATA Computer Recruitment, Anglia House, 86 Cross Struct

Southampton Office now operational at 23 Cumberland Place, Southampton SO1 2BB. Tel. 0703 37555

**LONDON (01) 637 0781** 230 Gt. Portland St. W1N 5HG

MANCHESTER (861) 832 5856
86 Cross St. M2 4LA
BIRMINGHAM (821) 643 1994
Woodworth Building, 192 New St.

c£5,750 + expenses

Woolworth Building, 102 New St.

BRISTOL (0272) 211035 Equity and Law Building 36/38 Baldwin St. B51 1NR

EDINBURGH (031) 226 5381 CRAWLEY (0293) 514071 Anglia House, 24/26 Fredorick St. 36 The Broadway

# COMMUNICATIONS EXPERIENCE IS VITAL TO YOUR FUTURE IN COMPUTING

SOUTH EASTERN COMPUTER SERVICES is already established as one of Europe's leading firms of on-line communications consultants. We are currently seeking potential consultants for major on-line projects throughout the UNITED KINGDOM.

We don't mind whether you are freelance or an employee; if you can match our needs now; you could become involved in some of the most exciting projects available anywhere, AND YOU CAN EXPECT TO BE PAID HIGH RATES AND/OR SALARIES ACCORDINGLY.

#### ANALYST/PROGRAMMERS

Minimum 4 years' commercial experience. Knowledge of CICS DL/1 or IMS would be an advantage, but hot essential as training will be given.

### ANALYST/PROGRAMMERS

Minimum 6 years' experience of finance applications. COBOL essential DOS and/or

## ANALYST PROGRAMMERS

Minimum 4 years' experience IBM 360/370 mainframe. Recent experience of the

### SENIOR PROGRAMMERS

Minimum 2 years' DEC experience. Knowledge of RSX11M operating s

### SENIOR PROGRAMMERS

Minimum 4 years' commercial experience. Knowledge of DOS/OS COBOL under

FOR FURTHER INFORMATION ABOUT THE COMPANY, RATES, SALARIES AND THE PROJECTS, CONTACT:

SOUTH EASTERN COMPUTER SERVICES SOUTH EASTERN HOUSE, 3/5 OLD BRIDGE STREET HAMPTON WICK, KINGSTON UPON THAMES, RT1 4DB

TELEPHONE: 01-977 5321 (10 lines) TELEX: 8814910 A Consultant will be available until 7.30 p.m. weekdays; Reverse charges from outside London Area

COMPUTER WEEKLY, May 11, 1978

# occ computer personnel limited



# experience = MAXImum rewards

#### ANY mini hardware High or low-level languages Technical or commercial systems Real Time applications

Our client is a well-respected and highly professional consultancy organisation with a continuous and impressive growth record over a number of years. Their activities extend across the full range of the computer industry with clients throughout the UK and overseas. Demand for their services is higher than ever, particularly in the area of mini computer applications and they therefore require a number of programmers to supplement their existing expertise in this field. Applications now being developed include air freight, computer typesetting, process control and telecommunications as well as various more commercially oriented systems.

Ideally we are looking for candidates with a minimum of 2 years' programming experience on Real Time Mini Computer applications, although we are also happy to consider candidates with less experience in this area. Due to the variety of hardware and applications currently under development, any mini hardware and language experience will be considered whether high or low level, commercial or technical.

The majority of vacancies exist at offices based in Hampshire and London although some candidates, specifically in the area of process control, may be based in the North-West. It must be appreciated, however, that due to the nature of the consultancy business, mobility is required from all employees and although every effort is made to assign employees to projects within daily travelling distance, there may be occasions when this cannot be done; all expenses are, of course fully reimbursed.

# Salaries to £6,500

Variety of work **Excellent career prospects** Stable company environment

The Group recognises the need for job satisfaction and motivation and this is demonstrated by their exceedingly low staff turnover. Reviews are carried out every 6 months and a progressive career development policy is geared to reward the individual's own ability.

The company offers an excellent remuneration package which includes attractive salary, free BUPA and life assurance, contributory pension scheme, permanent sickness benefit and relocation assistance if appropriate. In addition, the Group offers excellent opportunities for transfer to overseas subsidiaries.

If you are interested in these positions, or wish to find out more about the opportunities, please call Sharon Matthews on 01-242 9356 (day) or Billericay (02774) 22351 (evenings) or complete and return the coupon. Ref. 452/CW/SM.

I am interested in the Mini Programmer positions					
		-			
Name					
Address					
Audidas					
the state of the s			-		
Tel. Home		Work			



Specialists since 1971 in UK and international computer appointments

# RECRUITMENT SERVICES

**★ MINIMUM 12 MONTHS' EXPERIENCE** 

\* WIDEN YOUR COMPUTER KNOWLEDGE

\* PROGRESS TO ANALYSIS AND PROJECT RESPONSIBILITY

#### **ANALYST**

PROGRAMMER HOLLAND Our client, an international engineering company rotaining IBM 370 hardware seeks an analyst programmer with a minimum 3 years' COBOL experience. CICS VS would be an advantage. The company is situated in a historical University town close to the Dutch/German border.

Co. offers

★ Relocation expenses \* Working in a new modern complex

Working in a 1991 instance
 Excellent career prospects
 Salary around 40,000 guilders + BONUS
 Ref. 1473

#### IBM ANALYST PROGRAMMERS SURREY

Opportunities in a local areal Repidly expanding company sooks COBOL analyst programmers. This large concorn with large IBM equipment in a rcial and financial environment co. can

★ EXCELLENT promotional prospects \* Variety of new development work \* FREE BUPA and FLEXITIME

\* Salary to £6.000

Rof. 1382

SALESMEN/

WOMEN HOLLAND World-wide manufacturing company based in Amsterdam seeks salesmen/women to be involved in marketing their hardware, software and

ancilliary equipment. Co offers.

\* Tremendous career opportunities

\* World-wide first-class travelling

\* Relocation expenses for married and single persons

\* Salary 42,000 guilders (£10,000) + com-

Ref. 1339

#### SYSTEMS **ANALYST**

World-wide company which provides services to all and construction industry has an immediate vacancy for systems enelyst. Candidates should have at least 2 years in the design and implementation of large commercial systems. IBM programming background would be an advantage. World-wide user contact. Co. offers.

Excellent career prospects
 Generous fringe benefits including L.V.'s

★ Pension scheme / S.T.L.S.
 ★ Salary to £7,000

Ref. 1480

#### PROGRAMMERS MIDDX

One of the most significant forces in the computer services industry in the U.K., our client provides a comprehensive range of services to clients world-wide. Retaining IBM 370 158 under OS. co seeks programmers with min. 18 months COBOL and/or PL/I. They offer.

- \* Move within programming, into systems analysis or sales support or join one of their
- specialist groups
  \* Chance to move onto MINIS
- ★ Excellent promotion prospects ★ Salary £5.500

Ref. 1461

#### JUNIOR PROGS CITY/SE

months' experience on any IBM high level language to join highly successful team within leading national organisation with IBM 370 hardware. Co. offer A challenging career avaits you if you have 12

- \* New project commencing May/June
- Room for career growth Training in PL/I
- Learn Database and Teleprocessing
- Salary £4,500

Ref. 1150

#### ICL PROGS

Our client is a city-based financial institution retaining ICL 1900 hardware with a 2980 planned for 1979. They require persons with min. 12 mornths' ICL COBOL exp. and can offer:

- \* Exciting and interesting on-going and future development work

  \* Excellent training/promotion prospects

  \* 3% house-purchase scheme
- Non-contrib. pension / free life assurance
- Salary £5,000 neg.

Ref. 1437

CITY

#### PL/I PROG LONDON

LONDON Well-established D.P. division of major inter-national trading co. is rapidly expanding and consequently seek Senior PL/I programmer (knowledge ASSEMBLER an asset) with significant years of experience. They offer Variety of well-planned projects

- Promotion prospects with a company who know where they're going!
  - \* Training in CICS
    \* Staff restaurant
  - Salary to £7,000 p.a.

Ref. 1479

#### \* INCREASED EARNING POTENTIAL IBM PROGS

\* LEARN NEW TECHNIQUES — TELEPROCESSING, DATABASE, ETC.

LONDON ANALYST/PROG EAST END Multi-national company with IBM 370 equip-Electronics manufacturing co. working on a global scale seeks clear, logical thinking analyst programmer for their ICL 1900/2900 series ment requires pursons with minimum 18 months' ASSI MBLH experience to join highly professional tanta currently developing a major suphisticated on line systems. Co-offers

\* Control of small development or support \* Highly progressive organisation Continued development with a well-planned schedule

\* LEARN NEW LANGUAGES, NEW COMPUTERS

- projects Supervisory exp.
- Full scale of projects ranging from purchasing to financial modelling
   Subsidised restaurant / drinking club
- \* Salary £5,500.

Ref. 1153

#### **SYSTEMS** PROGRAMMER BELGIUM **ANALYST** Beautiful countryside surrounds this well-

Our client is a major organisation, providing comprehensive marine engineering and con-struction services to companies engaged in hydrocarbon development. Retaining IBM 370 under DOS/VS they seek person with 4 years' COBOL exp. with PL/I, RPG or ASSEMBLER an

- ★ Variety of projects pertaining to administration
- within a rapidly expanding co.

  \* Centrally based—BRUSSELS
- ★ English-speaking environment ★ Settling-in allowance for married or single
- persons

  \* Salary approx. £18,000 p.a. total package

  \* Ref. 1474

MINI PROGS Prestigo company based in America, Europe and U.K. are recruiting persons at varying levels (from programmers to systems specialists) for their now City offices. Having large DEC PDP equipment, they seek people with exp on any MINI but using ASSEMBLER. They offer.

- \* Extensive training in up-to-date technology
- ★ Excellent career opportunities
   ★ Training in RSX, RTII and RSTS
- \* Chance to travel abroad \* Salary £6,000-£10,000 p.s.

JUNIOR PROG HOLLAND

Ref. 1478

Very rare opportunity for ambitious person want int to work overseas. If you have initiative, good education and approx. 8 months' COBOL, PL/1 or experience of other language then ring NOW!

- Excellent training within world-wide organisa-tion using modern technology
   Responsibility for maintenance but will be
- more into deve Centrally based—AMSTERDAM

English-speaking country
 Selary 36,000 guilders (£8,760 ps)
 Ref. 1449

Our client, a major and successful concorn, wishes to strengthen its European programming team Retaining IBM 370 hardware under DOS/VS, the co-seeks ambitoner person with PL/I, CICS, or COBOL hong an agent. Co. offers

\* Involvement in development of new and exciting ranges by \* Opportunity to work with an expanding or-

Good promotional prospects
 Excellent benefits include cheap travel

ostablished NCR installation based near to the NEW FOREST and South coast. Min. 2 yrs. exp. in commercial or industrial systems pref. with NCR Century and Neat 3.

\* Currently setting-up strong team to develop

existing on-line systems

\* Introducing T P and Database modelling in
marketing distribution and finance

Discount on co. goods
 Subsidised lunch, sports / social club, pension

Computer dept of interestional concern has

recently produced a five year plan containing

proposals for major development across a very wide aren. Rotaming IBM 370 145 using COBOL + ASSEMBLER. Co. can offer

\* Salary C5, 250 + Xmas horus

\* Responsibility for analysis

★ Development of real-time system

Job security with prostige concern

Excellent career prospects
 Subsidised restaurant/sports social club

**PROJECT** 

\* Salary £7,500

PL/I PROG

LEADER

Ref. 1290

HAMPSHIRE

LONDON

Ref. 1428

\* Salary to £6,000

gangation operating world water

\* Controlly based - Amsterdam

\* Salary 40,000 garders (£10 000/2cost of living allowance and relocation expenses

#### WHY NOT FIND OUT WHAT IS AVAILABLE IN YOUR AREA?

This is only a small selection of posts we have available at present. If however, you don't see anything to suit your requirements please do not hesitate to telephone us. We have a wide crimica of posts we have a wide crimical of posts we have available at present. If however, you don't see anything to suit your requirements please do not hesitate to telephone us. We have a wide crimical of posts we have available at present. If however, you don't see anything to suit your requirements please do not hesitate to telephone us. For the above positions — please telephone 01-734 0152:3010 (24 hours) quoting the respective reference, number, or write to our London office

### CONTRACT DIVISION

#### **OVERSEAS**

IBM COROL NCR 299 399 499 COBOL IBM DOS PL/I PARIS
IBM DOS TOTAL D/BASE PARIS
PROJECT LDR IBM DOS PL/I PARIS IBM SYST 3/370 COBOL

Paris 9. arabia

£200 p.w. + sec. + exp. £300+ p.w. acc. + exp. £300 p.w. £200 + acc. + exp.

#### UNITED KINGDOM

IBM COBOLIMS IBM PL/I DOS VS IBM PL/I DOS VS IBM PL/I DOS IBM CICS COBOL IBM CICS ASSEMBLER IBM COBOL

HERTS £240 p.w. £200 p.w. £200 + p.w. £180 + p.w. ESSEX LEICESTER MANCHESTER £210 p.w. £250 p.w. £250 p.w. BIRMINGHAM N. ENGLAND £220 p.w.

IBM DL/I COBOL OS SYST AN IMS DRIDE IBM OS COBOL VMEB CL 1900 PLAN DRIVER UNIVAC 1100 COBOL PDP BASIC + RSTS/E PDP 11/70 MACRO II REXII D PDP II/34 BASIC RSTS/E + MAINFRAME COBOL PPP II MACRO II DATA GEN NOVA FORTRAN COMM APP BURROUGHS 3700 1700 COBOL

IMS DESIGNER

IBM TOTAL D/B IBM MARK IV OS

N. ENGLAND £230 p.W-YORKS N. ENGLAND £220 p.W. HEATS £220 p.W. n. England HERTS £210 p.W. BIRMINGHAM HERTS £220 p.w-

XBBBUS

£220 p.w. 2230 p.W. MAHAMIMANI £220 p.w. £200 p.W

and and N, England requirements. Phone: Perry Butler 061-833 9341/3. 620 Royal Exchange Manchester M.2. For all other contracts please telephone London Office, Christine Kay or Dave Hayton, 01-734 0162 (24 hours)

## KNIGHT PROGRAI SUPPORTLIN

87 NOTEL STREET LONDON WAS TELEPHONE, OF 734 0158/6 (84 FIDI. 189) DEFICES AMSTERDAM, PARIS, MANCHESTER



#### PERKIN-ELMER | INTERDATA DATA SYSTEMS | DIVISION

## **APPLICATIONS SOFTWARE SPECIALISTS**

The INTERDATA DIVISION of PERKIN-ELMER DATA SYSTEMS has located a significant part of its software development at its international Headquarters. based in Slough.

**SALARY TO £7,000** 

At present, the department is 40-strong, and combines a friendly and informal working environment with high professional standards.

Our current requirement is for suitably qualified professionals who can demonstrate significant achievement in the commercial software field. The successful candidates will form part of a new group, working in the area of development support, which covers such services as:

- \* Validation of Individual software \* Maximisation of system perforproducts.
- \* integration of these products into complete systems.
- ★ Documentation of the overall
  - ★ Continuation software engineering

#### THE QUALITIES WE SEEK INCLUDE:

- ★ A minimum of three years' relevant experience in a commercial software product environment, either in a development situation or as a user.
- \* Practical experience in COBOL and/or RPGII with some knowledge of Assembler. ★ Good communication skills.
- \* A knowledge of database and transaction processing techni-

ques would be an asset.

#### WE OFFER:

- \* Salaries up to £7.000 p.a. for the right applicant.
- \* Relocation expenses where appropriate.
- ★ The usual large company benefits. including pension and health insurance.

if you are interested and would like more information call Bernard Evans, or write to him at the address below, giving your career details.

PERKIN-ELMER DATA SYSTEMS, 227 BATH ROAD, SLOUGH, BERKS, SL1 4AX. TEL. SLOUGH 34511.

## 清明知识如本是恢复解析的2015年基础201 MASTASIMITA 145°

(COMPUTER ENGINEERING)

**SALARY c £6,000 P.A.** 

A leading Computer Manufacturer based in Hertfordshire is wishing to appoint the above position in order to cater for the training of engineering personnel under a Government scheme.

It is expected that suitable applicants should be:

- \* versed in modern computer technology
- \* able to demonstrate good communicative skills
- \* prepared to become involved in the selection of suitable candidates.

The position would be suitable for either a qualified Instructor or a competent Hardware Engineer with the desire and ability to progress in

Candidates should in the first instance contact:

ANDY CARTER (in strict confidence)

ON: 021-236 3781

**EVENINGS & WEEKENDS** 

ON: Lapworth 3272 REF. NO. CW/5/2

## SPECIALIST COMPUTER RECRUITMENT LIMITED



BIRMINGHAM 021-236 3781 Freepost, Equity and Law House, 35-37 Great Charles Street Oueensway, Birmingham B32BR **MANCHESTER 061-833 0427** Freepost, Blackfriars House, The Parsonage, Manchester M3 8 LONDON 01-935 0671

To £6000 UK SALARY



# MYRIAD | **APPOINTMENTS** LIMITED

Computer Personnel Consultants

#### **JUNIOR SYSTEMS CONSULTANT** CITY

We are seaking GRADUATES with at least a YEAR's commercial experience to join this expanding Bureau as Junior Systems Consultants. During your initial eighteen months you will undergo extensive training internally and externally in both business analysis and the company's financial products. The Company, a major U.S. Bureau, market a range of financial packages, together with an advance

programming language. The products are supplemented by a communication network linking 60 mainframes in the States to both Europe and Japan. The Company offers an excellent starting salary together with extensive training and the opportunity to move into business consultancy.

#### 2-4 years' COBOL

Section 1985 to 1985 to

Near CROYDON

Programmer/Analysts

These positions present an ideal opportunity for Programmers keen to accelerate their careers into analysis on a wide range of new development applications using database and on-line techniques. Successful candidates will join a project oriented environment and can progress rapidly to hold

esponsibility for the development of systems from inception to impleme Applicants should have a minimum of two years' COBOL programming experience gained on any machine. Keen to progress to analysis they should have a flexible approach to d.p. and be capable of managing small to medium size projects involving close user contact.

#### NORWAY

#### ANALYST/PROGRAMMER

LONDON

To £5000

£4500-£6000

. + Generous Overseas Allowances The UK services organisation of a major international company is urgently seeking an Analyst/ Programmer who will spend the intitial period of employment on secondment in Norway.

The successful candidate will assist with the development of various applications including Scheduling. Planning, Labour, Costing and General Accounting systems using a large IBM mainframe under OS. Applicants should have at least two years' experience using COSOL under OS and be capable of

The Company offers excellent conditions of employment and opportunity for rapid career advance An excellent UK salary is supplemented by a generous overseas allowence and full living exponess geared to individual family requirements.

### TRAINEE SYSTEMS PROGRAMMERS

We are able to offer you the opportunity to move into systems programming by joining the well established support division of an international organisation.

Our client operates large IBM mainframes under DOS VS with CICS. They now wish to increase their technical programming staff and are prepared to offer these positions to programmers interested in progressing a career in the systems programming area. To qualify you should offer a minimum of two years: experience gained in applications programming using Assembler, any knowledge of CICS would be of value.

The company offer an extractive starting salary backed by the fringe banefits associated with a large

24-hour answering service Please telephone for a confidential discussion or write to

30 Fleet Street London EC4Y IAA

**-** 01-353 0981 l

To £6000

#### Consultants

to £9,000 (even more for exceptional candidates)

#### Designers/Technical Consultants to £7,000

#### **Senior Programmers**

to £6,000

#### **Programmers**

to £5,000

Hoskyns Banking Division has operated successfully in the Banking Sector for many years. Our assignments range from strategic studies of computer requirements through to the production of programs and systems to meet particular requirements of individual banks. Our services include the provision of an International Banking package which has been supplied to many major banks. As part of our planned expansion we have vacancies for:

- \* Banking Specialists at all levels with real experience of banking systems
- \* Minicomputer Specialists to join a team working on the development of application and other software for an international distributed processing system based on PDP/11 computers. Knowledge of DEC computers, RTL/2 or similar high level languages will be an advantage.
- \* Programmers and Senior Programmers with experience of RPG programming.

Contact David Menzies on 01-251 4581 or write to Banking Division John Hoskyns & Company Limited 145/157 St. John's Street, London EC1V 4QJ

Hoskyns Turnkey Division specialises in the provision of  $\boldsymbol{a}$ complete systems and hardware service. Due to continuing and rapid expansion of our work in this area we require additional staff. If you have practical experience of implementation of commercial systems on PDP/11, HP3000 or similar equipment we can offer you an outstanding career opportunity. Our immediate need is for:

- \* Consultants to evaluate requirements and advise clients on computer strategy, to manage projects from inception to implementation, or to market our Application Systems.
- \* Technical Consultants to work in project teams on design of advanced systems
- \* Senior Programmers with at least one year's supervisory experience and an in-depth programming background
- \* Programmers with at least one year's experience of BASIC 1. COBOL, DIBOL or MUMPS

Contact Andy Mansfield or Tony Winslade on 01-242 1951 or write to Turnkey Division John Hoskyns & Company Limited 91/93 Farringdon Road, London EC1M 3LB

### Bournemouth £6000-£7500

Hoskyns Education, a division of the Hoskyns Group, has doubled its revenue in the last two years. To support this growth we need more consultants at our Bournemouth based Education Centre:

On joining us you will be provided with training in our methodology and course management methods. After this you will be involved in running our standard courses. You will organise discussion groups, manage business games, lead project work and above all, help people turn knowledge into practical skills. Within a year you could find yourself on brief assignments in Holland, Switzerland, Kuwait, Hong Kong and the USA ... to name but five countries in which we have given

In Bournemouth you will also take project responsibility for course development and client liaison and will have the opportunity of doing short consultancy assignments when not-

The people we are looking for will have had around four years' experience in the analysis, design and implementation of commercial computer systems including one or two years of managing people.

Naturally we pay removal expenses and senior staff also receive company cars.

If you want to work in a growth orientated organisation which produces the best education courses available please send full career and salary details, including your telephone

N. J. Blakeney-Edwards, Director - Education Division, John Hoskyns & Company Limited, 91-93 Farringdon Road, London EC1M 3LB. Telephone: 01-242 1951

IOSKITS!

A systems company with over 500 professional staff 13 computer centres and 14 years of continuous growth

#### **COMPUTER CAREER OPPORTUNITIES** BATH

The Bath and Portland Group Ltd provide a computing service to its subsidiary companies operating in the Building and Civil Engineering, Minerals, Engineering, and Agricultural industries. Due to planned expansion we are seeking persons to complement the existing small team to assist with the design and implementation of both new work and the enhancement of existing systems. It is envisaged that companies will be linked to the ICL 1901T mainframe using 7502 terminal equipment in the near future leading to 2950 conversion later.

#### **COBOL PROGRAMMERS**

We have vacancies for persons with at least 12 months' COBOL programming experience, preferably with ICL background those vacancies would be ideal for the younger programme seeking an environment to expand his or her abilities.

For the more senior programmer we offer the possibility of ICL training in system design and eventually systems analysis.

Starting salaries will be paid according to age and experience

#### **COMPUTER-OPERATOR**

An excellent opportunity exists for a person with ICL 1900 experience to join our operations team. It is anticipated that in the near future the present 1901T card and paper tape installation using EDS 80 and MT will be connected to RGE and on-line facilities with 7502 and 2950 later.

Two shift working is currently in force between 8,00 s.m. and 8.00 p.m. Monday to Friday. Salary includes a shift allowance and is commensurate with age

Please write in strictest confidence enclosing brief career details

and salary guide, to: Computer Services Manager The Bath & Portland Group Ltd. 20 Manvers Street BATH



#### **SYSTEMS DEVELOPMENT ENGINEER**

#### London

up to £5671

The Systems Development Engineer is a member of the Systems section, which is responsible for ana-lysing the computing needs of Central Control and ensuring that they are met.

A mini-computer to drive improved displays at the London control centre will be installed in 1979; replacements for the monitoring and control computers and for the scientific computer are now being planned. The scientific provides day-to-day support to all computer users in the department. The job holder has special responsibility for training users and preparing documentation for them.

You will be based in London, but some travel to the Midlands centre will be necessary. Salary range £4873-£5671. This is inclusive of

London Weighting and phases I and II pay policy Please write with full details of age, experience,

qualifications and current salary, quoting reference PS/616201(713), to the Senior Personnel Officer (Hinckley), British Gas, 59 Bryanston Street, London W1A 2AZ. Closing date for applications May 25, 1978.

**BRITISH GAS** 



SCHOOL OF ELECTRONIC AND ELECTRICAL ENGINEERING

#### RESEARCH ASSISTANT

A Research Assistant is required to join an SRC supported Research Project concerned with the application of digital stochastic computing techniques in on-line control and simulation. Applicants should be honours graduates in Mathematics and Statistics or Computer Science or Rico trical Engineering. Three year fixed term contract. Salary range £3688, £3918, £4161 per annum.

Application forms from: Chief Administrative Officer, Robert Gordon's Institute of Technology, Schoolhill, Aber-deen ABB IFR.

LECTURER II

**MYRIAD** 

**LIMITED** 

S. LONDON/KENT/

Computer Personnel Consultants

**APPOINTMENTS** 

Applications are invited for Applications are invited for several posts at Locturer II inval. Applicants should be qualified, proferably with practical experience, in one a more of the following areas Operational Research; Statistics, Computing and should be willing to contribut to the School's teaching. to the School's te

Salary Scalo (under review) £3744-£5985 — includes

The Services Officer (C.24) Leeds Polytechnic Calverley Street Leeds LS1 3HE 0532 462923

Closing date 17 May 1978.

**PROGRAMMERS** CLOSE ENCOUNTER 1-491 3266/4935095/ 499 2818 FOR OUT OF THIS

Mailing Systems

lst year c £8500 + CAR

This vacancy presents an excellent opportunity for an experienced Bureau Sales Executive, or perhaps a sales

oriented Analyst experienced in Mailing Systems, to John one of the foremost service organisations in the country. The person appointed will take over an established territory with an active client base and a good prospect list. The Company provide first-class support to their sales force who have the advantage of marketing extremely advanced and powerful products to all sectors of commerce and industry.

**SALES EXECUTIVE** 

Whilst the primary product will be a sophisticated and versatile mailing system the sales person will also be able to offer clients a complete range of services from machine time to specialist systems and programming services.

The Company offers good conditions of employment and a rewarding career path leading to main line

24-hr. answering service Please telephone for a confidential discussion or write to: 30 Fleet Street London EC4Y 1AA

#### **PROGRAMMER** £4,000-£5,000 High Wycombe, Bucks.

This is an opportunity to join a small D.P. systems development team currently implementing a comprehensive in-house system based on an IBM 380/40. The work is consequently very veried, covering not only programming but also systems analysis on Production and Inventory Control, Order Entry. Accounting, etc, making extensive use of a T.P. System. Past experience in some of the following fields would be an advantage:

- Cobol
- TP System
- DOS
- Assembler

Situated within easy reach of London, Instron is one of the most successful and advanced manufacturers of materials testing equipment in the world. Our products are widely used in research, development and quality control and have an international reputation for oursily We can offer all the advantages of working for an International organisation, and excellent fringe benefits including a non-contributory penalon/life

Please 'phone High Wycombe (0484) 33333 or write for an application form to the Personnel Monager, Instron Limited, Coronation Road, High Wycombe, Bucks HP12 35Y.



# COUNCIL

## **Systems Analyst/ Programmer**

to join a dynamic team of 6 people to complete the development and implementation of an on-line com-

Salary £4759-£5086 inclusive according to ex-

The Computer Unit operates twin 1904S computers and is currently considering upgrading to a new range computer. The Supplies Department is the largest eingle user of the computer. Both are situated at West Malling, near Maidstone, Kent.

in addition to competitive salaries we offer a contribu-tory penalon scheme and sesistance with relocation

tory pension scheme and sesistance with relocation expenses, temporary housing may be available. Training will be given where appropriate and encouragement to develop full potential.

Further details and application form returnable by May 26, from West Mailing (0732) 645845 Ext. 2395, or write The County Supplies Officer, Kent County Supplies Centrel West Malling Airfield, Kent ME 19 600

#### **Manchester**

## **System Designers**

£4779 to £7760

\*Minimum 3 years working with real time software
\*Substantial design experience
\*Degree level qualifications

## **Project Programmers:**

\*Minimum 2 years programming experience \*Some design experience \*Degree or HNC

Ferranti are European leaders in industrial process control and digital data communications with more than 1000 systems based on the ARGUS range of computers already in use. These openings result from recent large orders and plans for expansion. We are seeking staff who are capable of working on large and complex systems with a minimum of supervision and who are looking for technical challenge and advancement. Our offices and laboratories are in a pleasant part of South Manchester close to good residential areas. Generous relocation allowances are available for staff from outside the area.

Apply to Mr. W. L. Robinson, Ferranti Limited, Simonsway, Wythonahawa, Manchester M22 5LA quoting reference 78WD22/CW, or telephone 061-428 3644 ext. 253 (reverse charge) for further information.

Other opportunities Informal interviews

We also have vacancies for experienced sales engineers, project engineers, test engineers, metrienance engineers, draughtemen and technical authors. If you would like an informal discussion on career prospects, senior members of our staff will be happy to meet you at the following times and places. Pack Horse Hotel, Nelson Square, Tuesday, 23rd May.

ALDERLEY.EDGE: The Edge Hotel, Alderley Edge. Wednesday, 24th May.

MANCHESTER: The Portland Hotel, Portland Street, Thursday, 25th May.

4.30 p.m. to 8.00 p.m.

## U.S.A.

UNIVAC 1108/1110 SYSTEMS PROGRAMMERS **APPLICATIONS PROGRAMMERS. ANALYSTS** NON UNIVAC COBOL DATABASE ALSO CONSIDERED

EXPENSE PAID INTERVIEWS, MAY 17th/19th Spend 1/2 years with SYSTEM DEVELOPMENT CORPORATION (SDC), one of the most prestigious U.S. computer services organisations, SDC has successfully implemented many sophisticated, large scale, on line systems.

We are located in a charming, rural university environment in one of the most beautiful and scenic areas of America.

★ Excellent salaries including generous company peld benefits.
★ Relocation expenses paid including return air fare
★ Valuable on the job expenence and training with an opportunity to visit and

TO ARRANGE INTERVIEW, write immediately (including phone number) to our U.K. representative it. Layine, Royal Lancaster Hotel, Lancaster Torrace, London W2 27Y Note: Mr. Layine will accept phone calls commencing May 11th at 01-262 6737. Reverse charges accepted:

SALES —

**JOB** 

**CHECKLIST** 

When considering a job change you must be satisfied by

relocation.

No, if you live in Southern

England. Else company offers excellent

the answers to these questions.

Data Processing Recruitment Consultants

#### Database + Tele-Processing **Paris**

Salary: C.£16K Negotiable

One of the Worlds foremost Software and Hardware specialist groups with centres throughout Europe, North America and Asia has asked Logistix to identify top calibre Database & Tele-processing Programmers up to Team Leader level for both permanent and contract positions in France,

Suitable applicants must have current hands-on applications or systems programming experience using COBOL, PL/1 or BAL. It is anticipated that candidates will have worked with MIS applications for 2 years or longer, preferably with either IBM

or Honeywell compatible Database Systems.

Applications cover on-line enquiry systems, sales ordering, stock/inventory control, budgeting and forecasting etc. The scope of projects and the prestige of working with this acclaimed Market Leader will be certain to appeal to the most

demanding career minded individuals. Interviews will be held at our Client's London offices as soon as possible with a view to making offers of employment within 10 days of interview.

#### **Programmers—Analysts—Consultants** Holland

Salary: £9.5 -- 15K + Exceptional Benefits

Our clients, pioneers in frontier communications developments have contributed significantly to the accelerated advancements in Mini Computer technology and are internationally recognised as market-leaders in their field. In pursuit of maintaining their forefront leadership our clients seek to identify key personnel to join them in their next development phase.

Real-time specialists with strong Mini Computer backgrounds will make a vital contribution to the attainment of these goals within an environment offering the highest standards of professionalism, ob satisfaction and development potential.

Successful candidates will ideally demonstrate concentrated expertise with a narrow band-width of specialisation rather than general experience across a broad spectrum. Furthermore they will either be graduates (Computer Science or related

discipline) or will offer exceptional relevant

experience in lieu. Consultants, Team Leaders and Senior Analysts are likely to be currently engaged in Data Communications or Real-Time mini software development within either a systems and software group or end-

user environment implementing sophisticated applications software. Analyst/Programmers and Programmers will certainly offer extensive Assembler expertise within these areas of specialisation. In addition to above market salaries our clients will pay full removal expenses for you and your family and provide, where necessary, a resettlement advance. The costs associated with temporary accommodation will be met by the company pend ing location of permanent housing. Numerous other exceptional benefits are offered providing a total package of considerable attraction

#### Scientific Fortran Programmers Germany

Salary: £18K + Package

THE CLIENT: A multi-national Europeart Research + Development Agency is further expanding its team strength in the areas of Scientific project implementation and require several Permanent Fortran Programmers with either Mini or Mainframe hands on experience (not ivory, tower).

THE APPLICATIONS: A wide variety of projects

are currently being developed and planned requiring specialist skills in one or more of the following

The scope and involvement of these applications are likely to be both challenging and interesting and are certain to push the horizon of technical sophistication to the limit.

THE PACKAGE: In addition to a very realistic salary the Company also provides generous re-location expenses, medical insurance and pension schemes as well as initial paid accommodation expenses for you and your family. Interviews will areas: Numerical Analysis, Image Processing, be held in London during May and offers will be made within days.

### **RPGII Programmers** Thames Valley + C. London

Salary: £7K + O'Seas Travel

An International and highly reputed Database/ Tele-processing Systems Group has a number of new openings at three convenient locations in the South-East for RPGII programmers with three years or more experience of Commercial or Business

System applications.
Ideally candidates will have gained their programming experience on IBM System 3 or 32 and will have some basic software knowledge. Applications

include development of T.P. and Database packages compatible with IBM Mini hardware. This is certainly a state-of-the-art opportunity and will appeal to challenge seekers with career development

The high salary reflects the importance which our clients place on the acquisition of these personnel whose future are assured in this excellent profess

#### New Range Database+T.P. Scandinavia or London

Salary: c.£16K (Scandinavia) c.£8K (UK)

An important client of International repute with A minimum of 18 months solid New-Range exper-offices in the Thames Valley, Central London and lence is a prerequisite. The Scandinavian based in Argentry reduite the tollowing berwan ent or long contract personnel! Consultants, Analysts Analyst Programmers and Programmers to work on a wide and interesting variety of commercial projects involving Database and Tale processing expertise.

Successful candidates will have current exposure to large ICL: New Range hardware and will be able to demonstrate expertise in one or more of the following areas:

a) DME or VME/B/K b) COBOL or Fortran c) 1900/2900 conv. d) DBMS/T P

ositions are for 1 year (renewable).

in addition to extramely competitive salaries full re-location axpenses for candidates and their families are provided as is a re-settlement allowance.

Logistix, Freepost 32, London WIE 3YZ 01-4914636 Telex 28800 (Reverse charges)

Avonthouse, 366 Oxford Street, London WIN 9HA

#### **Senior Production Controller**

Croydon

To £5,000

New position — New hardware — Expanding environment

This new position has been created as part of a major expansion plan by our client's DP department. Already a major user of DP they are committed to further significant investment. As a first stage a Data 100 terminal is being installed as a front end processor to a 370 / 158.

The successful applicant will run a small team - initially consisting of a production controller and terminal operator. It will be necessary to liaise with user management and staff as well as the systems and programming

Candidates should have outstanding OS JCL knowledge and a business appreciation. They should have a mature and responsible attitude as this is a critical position within DP

This is an opportunity for someone to develop with the department's expansion and build a significant career. Our client is part of a major financial group and so as well as a competitive salary, major company

This is an urgent requirement so telephone our CROYDON office NOW or write quoting ref. CW16-8H.

01-686 9693 (24 HOUR ANSAPHONE) | 061 236 2419 FAULTRIJE R FROUSI 19,PARK STREET, CROYDON, CROTTN | FAULTANER STREET, ATANCHE STER MEAND



CAPP ASSOCIATES



## **Production Controller Computing Branch**

The Production Section of the Computing Branch operates a 1963 Computer with LDS 60's and magnetic tapes, using GEORGF 3, to provide a general purpose computing service. Batch processing includes accountingly work, analysis of enquirering data and critical path planning. An on-line service is provided for data exhting and proquandevelopment A 7905 communications processor is used for competensists VEREs and the 1903T to an IBM computer on another site. Data preparation is covarkey to disc

The Production Controller will have responsibility for the efficient renewig of this Section, including planning for, and the installation of new equipment, includenable of System software, the data communications network and software and the implementations of new systems in co-operation with the Development Controller Several years experience in the field of computing is required with the ability to manage staff and promote good labour relations

Salary within a scale rising from £7606 to £9771 per annum

Applications quoting Vacancy Number 1196/78/CW giving full details should be forwarded to the Personnet Officer (Recruitment), to arrive by 1 June 1978.



Central Electricity Generating Board South Eastern Region Bankside House, Sumner Street,

Computer Studies Group Senior

Experimental Officer

opplications are invited for this post in the Computer Studies, Group, to be appointable for the running of the Computer Studies, Group, to be supported by the running of the Computer Studies Teaching Liborator Little Studies of the Library of the Computers, and defined a supervising the deprivate and extensive the person appoints the the Library of the Properties of the Library of the Computers, and will wise a lightly service of the Computers and the Computer of the Computers and the Computer Studies of the Library of the Computers and the Computer Studies of the Computer S Salary Within range E3680-68178 Initial salary according to qualification and experience. USS benefits. one to: E. C. P. Rob

UNIVERSITY OF LEICESTER

### COMPUTER LABORATORY SYSTEMS PROGRAMMER

institute are invited for the post of Programmer within the Systems Floys and the Computer Laboratory. The work will include implementation of the Miglands United his Manuals SALDIE (). Development of on-computer with computer Loke. Development of system software on the contral government of system.

The Laboratory has a COC Cyber 72 nonstating under NOS AND SOPE Application should possess a good degree, as equivalent Knowledge of descontinuntations or perspectal interfacing which for an educations before the perspectation of the state of the stat

PROGRAMMER SOUTH ENGLAND TOP RATES

RPB-II, N. LONDON TOP BATES A7 Tojax Grantster Bereich 47 Tojax Grant, WC2 01-353 \$201

CONTRACT

PROGRAMMER



#### **COMPUTER SALES! SYSTEMS SUPPORT! ANALYSTS!**

c £14,000 + company car

Our clients, one of the fastest growing computer companies operating in this country, are keen to recruit sales executives for the MIDLANDS, SOUTH WALES and EAST ANGLIAN areas. Vacancies are also available

Having been in this country for thirteen years, they are still achieving growth at the rate of 30% per annum in conjunction with the other divisions of the company who also operate in high technology fields. Applications for these posts are invited from:

- Experienced mini-computer or bureau sales executives aged
- projects or similar background, who wish to enter the sales world. Aged 24/32.
- Experienced sales people from a different sales environment who wish to enter the computer sales world at trainee lavel

Renumeration will be an excellent basic salary + negotiable guarantee + commission = £13,000 on target Income. Fringe benefits include a Cavalier GL car + all expenses + an excellent pension scheme + 1st class sales incentives.

For full details and immediate confidential interview telephone your nearest ATA office or write enclosing a curriculum vitae to:

ATA COMPUTER RECRUITMENT 5th Floor, Woolworth Building 102 New Street, Birmingha Southempton office now operational at 23 Cumberland Place, Southempton, SO1 2BB. Telephone: 0703 37555.

Take the E.D.P. lead

LONDON (01) 637 0781 BIRMINGHAM (021) 643 1994 EDINBURGH (031) 226 5381

The Commercial Bank of Australia Ltd offers career

opportunities to top computer personnel who seek better financial and career opportunities abroad.

A totally new system is being developed at CBA Headquarters in Melbourne incorporating on-line

services with distributed processing and decentralised

data bases. The new system will use structured design

techniques to produce integrated modular accounting,

Functions cover the attainment of approved stand-

ards in systems development and computer operations, with the provision of the highest standards of integrity and security of computerised activities. Applicants should have \$ years experience of communications

and knowledge in systems analysis, programming, operations, data base management, information security, accounting/auditing. Further, a sound capability in

quality assurance and an awareness of the potential

financial and management information systems.

Quality Assurance Specialist

up to A\$22,000

2

MANCHESTER (061) 832 5856 BRISTOL (0272) 211035 CRAWLEY (0293) 514071

UNIVERSITY OF ASTON IN BIRMINGHAM Department of Applied Psychology

#### BIOMEDICAL **ENGINEER**

The Neuropsychology unit toquites an engineer with good knowledge of comprising electronics to operate their PDP-8E computer system Candidates should have experience of minicomputers and in problem solving although an appropriately qualified graduate will be considered. The successful candidate with one seem working in considered The successful can-didate will join a team working in Electroencophalography and evokod responses. In clinical diagnostic work as well as in fun-ramental research Opportunities for gaining a knowledge of neuro-psychology and working for a higher degree Facilities available on a PDP-15 and the University ICL 1905.

Salary within the Other Related 1B Scale — £318B-£5282 p s. Informal enquiries to Dr. G. F. A. Harding, Head of Unit (Tel. 021-359 3611 ext. 6255).

Further particulars and appli-cation forms may be obtained from the Staff Officer, Univer-sity of Aston in Birmingham Gosta Green, Birmingham B4 7ET.

The appointment will be for a temporary period of 12 months in the first instance, with a possibility of a further extension. Please quote reference numbe 0/010/CW.

> THE UNIVERSITY **OF LANCASTER**

RESEARCH ASSISTANT DEPARTMENT OF COMPUTER STUDIES

Applications are invited for the post of RESEARCH ASSISTANT in the Department of Computer Studies Alone dutes will be to Bases in developing and documenting software for the Department's NOVA and ECLIPSE minicomputers Experience of an assembly language would be advantageous

The appointment will be for a period of one year at the Tower and of range IB (C3189-C4501)

Further particulars may be obtained (quoling inference L. 47 A) from the Establishmen Officer, University House, Builingg, Lancaster LA1 4YW, to whom applications (formulations particulars than the particular transport time to be proposed to the particular transport time to be presented to the particular transport time transport time transport time transport to the particular transport time transport time transport time transport time transport time transport to the particular transport time transport to the particular transport time transport time transport to the particular transport time copies) maming three returns that the next than 5 June 1 878

The CBA is a major Australian bank with over 900 offices in Australia, New Zealand and overseas.

Attractive salaries are offered and fringe benefits

include home purchase assistance, relocation costs and

Initial interviews will be held in London during the week of 15th May, with final interviews conducted by

senior Australian consultants, also in London, in the

base. We require at least 10 years EDP experience including large data base design and management, with DBMS software and architecture, data dictionary.

directory and systems performance measurement involvement. Thorough knowledge of available software and on-line processing systems and developments is

**Data Administration Manager** 

up to A\$22,000

quanty assurance and an awareness of the potential demands on the system from a developing user is required. A degree or equivalent is preferable.

DBMS Manager

up to A\$24,500

Responsibilities are for the design, implementation and maintenance of the on-line data bases, access techniques and the initial physical structure of the data

Specific duties will include defining the content and logical structure of the data base and as a consequence, establish the data dictionary, define entry standards, data protection and facilitate systems integration. Background must include business analysis, systems design and programming, with dictionary assembly and data structure design. This experience should also include one major management information system. A degree in Economics, Mathematics, a technical or computer science is preferred.

Please apply as soon as possible enclosing full career and personal details and salary history to Mr. A. G. Boyd, clo The Chief London Manager, The Commercial Bank of Australia Ltd., 12 Old Jewry, London EC2.

All applications will be treated in the strictest confidence.

subsidised pension and medical scheme.

#### GOOD COMPANY? HOW MUCH?

**MUST I MOVE?** 

SECURITY/

BENEFITS?

Excellent Base Salaries + guarantees. Realistic earnings to £15,000 or more.

Yes, excellent. Large Computer

manufacturer. Fast growth.

WHAT MARKET? Selling into large own-user base. Hundreds of well qualified prospects and

> customers. Excellent long term future. Career

Development Programme. CAREER? Distributed Processing (terminals, minis, PRODUCTS?

comms, data-entry, small business systems etc.)

MONEY, CAREER, PRODUCTS, SUPPORT, NICE PEOPLE, CUSTOMER BASE, EXCELLENT ENVIRONMENT,

EXPENSES. **INTERESTED?** Phone us to talk it through. Reference

# **Chemical or** Mechanical **Engineers**

Senior

Marketing/Sales **Positions** 

World leaders in Engineering Applications and Design Automation, using Computers. They need:

C£8,500 p.a. base salary

A Marketing Consultant to be responsible for The Mechanical Engineering Sector.

A Marketing Consultant to be responsible for the Chemical Engineering / Process Industry Sector.

These are EXCITING, CHALLENGING opportunities. Phone or write to arrange discussions REF CW 183.



Insight Marketing & Personnel Consultants Limited, 72-75 Marylebone High Street, London W1M 4AJ. Telephone No. 486 5644

# prouncing a comprehension programming its right here

There are overwhelming reasons why you should get into this exciting computer unit, which has grown extensively - and will be expanding on an even greater scale from here on in .

#### 1. Money

Salaries are at present under review to take effect from 1st July. And projected expansion could take you swiltly through the promotion stakes and salary scales. These are most certainly not dead men's shoes situations!

#### 2. Experience

Familiansation with our big Univac systems takes just a few days. Literally. So if your experience lies elsewhere you can increase your future potential by widening your knowledge here.

#### 3. Potential

Right now, the latest UNIVAC equipment is employed - an 1100-11 (comparable to ICL 2970 or IBM 370/158) with 393K memory, fast-developing on-line facilities, and on-line programme development facilities. Plans are laid for a dual processor system in 1979 to be followed by a larger dual processor system in 1981. So getting in now means tremendous career potential as the rapid expansion occurs.

#### 4. Job satisfaction

Few computer users have a comparable application range. You could be working on jobs involving social



workers one day, educationalists the next and the police the next. Applications now in the pipeline concern a traffic accidents analysis, personnel records, the supplies system and an on-line library system. So it's variety all the way!

#### 5. Benefits

Removal expenses, disturbance and lodging allowances and assistance with housing are given

Act now - include appropriate background Act now - include appropriate background details and indicate which position interests you in your letter addressed to the Head of Computer Services, County Hall, Kingston-upon-Thames, KT1 2DN, or phone 01-546 1050 ext. 3479 for more information. Your application must be received by 26th May 1978.



where appropriate. There's also the advantage of flexitine working. Membership of the staff duling automatic and free - here you'll enjoy a but, and activities range from shooker, darts, squash, tennis and badminton to disco's and drama productions. There are also attractive restaurant facilities. Appointments immediately available are.

#### **Software Specialist**

up to £6,382

Internal promotion is the reason for this job. It involves working with UNIVAC software such as EXEC8, CMS and TIP, plus advising the Development Group and Operations Support Group and developing in-house software. UNIVAC experience is not essential but you must have experience of any major manufacturers' operating systems and communications software.

#### **Lead Programmers** - up to £5,350

You will assist Senior Programmers in design/specification of programmes and testing critical functions, 3 years' experience plus knowledge of COBOL is required

#### **Programmers** - up to £4,900

If you have at least 15 months' COROL experience you'll start at a salary linked to your achievements go far - but the career scheme gives opportunity to move fast through the salary scales.

#### SENIOR SALES

Basics to £7,000 + 12 month Guarantees Quota c.£13,000 + Car or allowance

Distributed Intelligence/Communications

Applications are invited from established professionals with proven records of selling successfully against budgets. Sound commercial experience in the mini/mainframe industry and good applications experience in teleprocessing environments are particularly useful. An excellent starting salary package will be paid to successful candidates and an exciting future is assured.

Reference CW/15/1

#### SNR. SUPPORT ANALYSTS

To £7,000 p.a. + Car

"Teleprocessing/Communications

The emphasis is on a high technical level of teleprocessing and/or communications experience gained in commercial environments. The jobs involve are sud post salus analysis and a high percentage of client liaison and sales support work. Applicants will be mature, with the confidence gained either from holding responsible ents or in similar support roles. positions in user environ

Reference CW/15/2

Vacancies exist in these areas: London and Home Counties: Birningham and the Midlands Bristol and the West Country Manchester and the North

Applications will be treated with the strictest confidence and should be made to BOB BOWER, Advising Director.

HUTTON EXECUTIVE SELECTION CTD.

#### MARKETING MANAGER

**Accounting Packages** 

Computer Service Industry Basic £7,500 + Bonus £1,500 + Car

**West London Based** 

Our citents are a lending name in the computer service industry. Acquisition, expansion and development have dictated that they recruit a Marketing Manager to create marketing strategy for accounting packages with particular emphasis on firms of professional accounts.

Other useful experience could be a knowledge of commercial banking and it would be advantageous if candidates have had direct sales experience at some time. A £9,000 salary package plus a company car will be provided and the future of a successful applicant is assured with this highly professional organisation.

## PRODUCT LINE MANAGERS

Mini Computers/Terminals Basic to £9,000 + Expenses

Usual Big-Company Benefits

Central London Based

Our clients are one of the World's largest mini computer and terminal manufacturers with an excellent reputation in the communications and distributed intelligence market-places. They require two Product Line Managers, one for their mini computer equipment, and the other for their range of terminals. These Managers will have total marketing responsibility for their designated product lines including forecasting pricing, monitoring and training. Naturally it would be expected that suitable application.

Reference CW/15/4

Interested applicants should telephone BOB BOWER, Advising Director. Full details are available on all positions at interview.

## **NATIONAL** SUPPORT MANAGER

Basic c. £12,000 p.a.

Usual Benefits including:

Substantial Tax Free Car Allowance

Central London Based

Our clients are a highly reputable and respected manufacturer of computer systems and are particularly involved in the decentralised data processing and communications market-places.

They operate in the United Kingdom through a national network of branches supporting both front line sales executives and pre and post sales support feams.

We are to identify suitable candidates for the vacancy of National Support Manager. The job involves the development and responsibility for implementing the systems and software support policy within the company. The successful applicant will be advising on various facets of the overall support structure including the operating systems support provided by the Company, the role of the software house, the role of the and post sales support at pranch software house, the role of pre and post sales support at branch layer, and the role of the central software development department.

We are inviting applications from candidates who readily identify with the specification and feel that it is unlikely that any applicant who has not held a responsible position in a similar support environment, would have the necessary experience to succeed in this highly demanding and vital position.

Reference CW/15/5

Please contact EOB BOWER, Advising Director in the strictest confidence to arrange an appointment.

#### Kreativität und Kontaktfreudigkeit erwünscht Versicherungswirtschaft

Wir bieten den kompletten Rechenzentrum-Service zentral in Frankfurt für alle europäischen Zweige einer weltweit aktiven Versicherungsgruppe. Da die Nachfrage nach unseren Dienstleistungen beständig wächst, haben wir unsere Hardware jetzt auf eine /370—138 mit 512 KB (unter DOS/VS Rel. 34) ausgebaut. Aufgrund unserer Expansion wird ein

### ANALYST/ **PROGRAMMIERER**

— mit guten Englisch-Kenntnissen -

mit der Fählgkeit, Projekt-Leiter zu werden, gesucht. Die Aufgabe besteht in Systemanalyse in allen Versicherungsbereichen für Neuorganisation, Anderung and Übernahme fertiger Abläufe für weitere Länder Europas, aber auch teilweise Programmierung (ANS/COBOL) dafür.

Sie haben sich schon einige Jahre in Systemanalyse und Programmierung im kommerziellen Bereich bewährt, sprechen gut Englisch und kennen sich vielleicht sogar schon etwas im Versicherungswesen aus. Sie erwarten gute Entwicklungsmöglichkeiten in einem kleinen Kreis junger und engagierter Kollegen, ein sicheres und ständig wachsendes Aufgabengebiet und selbstverständlich ein sehr gutes Gehalt.

Wenn Sie sich angesprochen fühlen, senden Sie bitte Ihre aussagefähigen Unterlagen an die COMPUTER SERVICES EUROPA GMBH, 21 Westendstrasse, 6000 Frankfurt/M, West-Germany. Tel.: 0611/74 04 04. thre Bewerbung wird von uns absolut vertraulich behandelt.

and female) whose job skills are in demand, and where a shortage exists within the Canadian labour force. Such is the case within many areas of the Data Processing job market where there is a strong demand in several areas of the country for the following specialised people.

#### PROGRAMMER/ **ANALYSTS** £8,000 to £11,000

Experienced with medium to large-scale equipment, preferably IBM under OS/VS or MVS. COBOL, PL1 MARK IV languages. CICS, TSO, IMS or other DBMS exposure desirable. Positions available in a broad range of application areas and industries.

#### SENIOR ANALYST/ **PROJECT LEADER** TO £13,000

Strong business background with several years' system design and project control experience. Good conceptual, communication and leadership skills essential. Career to date should reflect a proven track record of success to the implementation of large-scale systems. Positions exist in retailing, manufacturing, financial institutions and natural resource industries.

#### **SOFTWARE SPECIALISTS** to £15,000

A strong demand exists for specialists skilled in the support of large-scale IBM installations. Your background should include solid experience with any of the OS/VS, MVS, CICS, TSO, IMS DB/DC. System 2000. ADABAS, 370 ASSEMBLER, SCP support, performance measurement and evaluation. Canadian business is placing an increasing emphasis on such leading edge areas as distributed processing, telecommunications

Our representative will be conducting preliminary interviews in London and should you feel interested in exploring the matter more fully, we invite you. In complete confidence to write or telephone, at which time you would be given more detailed information about Canada and its major cities, and how your particular skills fit within the prevailing job opportunities.

Jili Rowlands 34 Niton Road, Richmond, Surrey 01-878 5588 (after 6 р.т.)

# Basingstoke & Deane Borough Council

## **Analyst/Programmer**

£4239-£4545 plus as

The Council has decided to appoint a second-in-command in the Computer Section and would be pleased to hear from you if you have some (and particularly if you have all) of the following 3 years' experience in Cobol (including t.S. file

Final II

JCL/George I/George II

Good knowledge of ICL software and its capabilities

The new post is an important one in a small team operating on ICL 2904 with 2 EDS 80 and 4 mag. taps with DDE, Future applications will include non-financial routines and the person appointed will play a significant part in these developments.

Housing accommodation may well be available and essistance with removal costs will be given if required There is an excellent staff canteen.

For an application from returnable by 25th May,
1978, please telephone Basingstoke 56222 axt.
207, or write to: The Personnel Manager,
Basingstoke and Deané Borqugh Council, Civic
Offices, London Road, Sasingstoke, Hants
RG21 2AJ.

#### The Institute of **Oceanographic Sciences**

has three vacancies

#### **Marine Information and Advisory Service**

MIAS is the national oceanographic data centre for the UK and has a responsibility to acquire information and high quality data and to make them rapidly available in the most useful format to industry, research workers and government departments A computer based data bank has been established at the Bidston laboratory of IOS and the enquiry and information service is located at Wormley in Surrey.

An oceanographer is required to assist in the answering of enquiries, and in particular to handle requests requiring interrogation of the data bank via a computer terminal at Wormley. Applicants should have an interest in the handling of data by computers. (Ref. 78/009/593)

Two programmers are required at Bidston (Merseyside) to sessist in the writing of software for the selection, processing and presentation of data and to maintain the MIAS software library and its associated documentation. (Ref. 78/201/5) The appointments will be to the grade of Scientific Officer (SO) or Higher Scientific Officer (HSO) according to ege, qualifications and experience. Minimum qualifications are an HNC or degree in an appropriate subject.

Salary will be

80 £2149-£3527 p.a.

HSO £3254-£4484 p.a.

plus supplements of £313.20 p a. and 5% of total carnings (subject to a maximum of £208.80 p.a.) Starting salary may be above the minimum according to qualifications and

Salaries are currently under review.

There is a non-contributory pension scheme. The NERC is not a government department but conditions of survice are similar to those of the Civil Service. Application forms and further details from The Secretary, institute of Oceanographic Sciences, Brook Road, Wormley, Godelming, Surroy GUB 5UB, Tel. Wormley (042-879) 4141 ext. 272.

RESEARCH COUNCIL

Closing date for applications: 31 May, 1978. NATURAL ENVIRONMENT

### Automation Engineer

Salary: £6204-£6615 inclusive

We have a vacancy for an Automation Engineer to assist with automation of a sewage treatment works at Kingston, Surrey, a wide experience of real time process control systems including deta storage, system identification, modelling and simulation techniques is essential. Experience in the specification, testing and commissioning of complete systems is necessary and an ability to program efficiently in a high level real time language such as Extended Fortran, Coral, etc. is essential, together with a knowledge of misiscomputers and as discharge of misiscomputers and as discharge of misiscomputers. owledge of mini-computers and peripherals, mid knowledge of mini-computers and peripherals, microprocessors and telemetry. Familiarity with sewage treatment processes sensors and instrumentation is desirable but
not essential. The person appointed would for the first 2/3
years be based at a central London design office but spend a
proportion of his/her time at the sewage treatment works at
Kingston. Surrey, which is to be extended and automated.
Subsequently he/she would be based at the treatment
works and would have a responsibility for the commissioning of continuing successful operation of the
acheme followed by further schemes in the Greater London
area.

136 Hour week : 24 days holiday Pension Scheme

on forms are available from Personnel Branch Application forms are available from Fersonnel Branch, 4th Floor, Broadway Buildings, 50-84 Broadway, London, SW 1H ODB (Talephone 01-930 0754) quoting reference 76. Closing date: 26 May, 1978.

## **Thames Water**

# **NORTHERN HOME COUNTIES AND MIDLANDS**

# SALES ENGINEERS

Are you selling in any of these market areas?

- ★ Process Control
- ★ Automation
- ★ Numerical Control
- ★ Data Logging
- \* Computer Based Industrial Systems

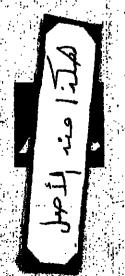
ARE YOU EARNING £12,000+, WITH COMPANY CAR AND LARGE COMPANY BENEFITS?

This major international mini computer supplier is answering the world's demand for greater productivity by producing automation systems with advanced technology.

Tremendous sales success has created the demand for additional sales engineers in London and the Midlands.

Successful applicants will enjoy an excellent income package from a high base salary plus commission. A company car is provided and benefits reflect the importance of the positions.

Telephone the advising consultant quoting reference CW 181 or write:



**Insight Marketing & Personnel Consultants Limited** 72-75 Marylebone High Street London WIM 4AJ Telephone No. 01-486 5644

## **AUSTRALIA & NEW ZEALAND**

#### **OPPORTUNITIES FOR** COMPUTER ENGINEERS

Opportunities are available for experienced Computer Engineers who are thinking of migrating to Australia or New Zealand.

Control Data systems are installed in all Australian capital cities and in Auckland and Wellington. New Zealand. The company's products include mainframe and mini computers, peripherals, terminals and magnetic media and supplies. In addition the company provides a nation wide data services network, maintenance, software consulting and computer facilities planning and construction services.

YOU should have several years of system or peripheral experience preferably with Control Data products, IBM 370 SYSTEMS or ICL SYSTEM 4. YOU will be offered an excellent salary package. superannuation, top working conditions and real career opportunities, in addition to assistance in

relocating to Australia or New Zealand. For further information please telephone John Smith, London 572 3411, or send your resume (including contact telephone number) to Control Data Limited, Tamian Way, Green Lane, Hounslow, Middlesex TW4 6BL, marked for the attention of Mr. J. Smith. interviews will be conducted in London during the

week commencing 22nd May. CONTROL DATA AUSTRALIA PTY LIMITED

# -JOIN THE 2900 PROFESSIONALS

#### SENIOR AND SYSTEMS PROGRAMMERS:

Have you the necessary experience and drive to join an energetic team of computer professionals engaged in installing and developing a large ICL 2976 computer providing comprehensive Batch, RJE, MAC and TP facilities

SENIOR PROGRAMMERS with experience of COBOL and SYSTEMS PROGRAMMERS with experience of sophisticated operating systems (VME/B, George 3 or similar) are required to supplement the Software

#### NORTH YORKSHIRE COUNTY COUNCIL

The council's administrative headquarters in the market town of Northeller ton is in the heart of the North Yorkshire countryside close to the North Yorkshire Moors and Dales National Parks, York and Harrogate.

A large selection of attractive and reasonably priced properties are available within the town and surrounding villages.

Starting salaries up to £4615 (excluding Phase 3 settlement) will be paid according to experience. The Council will pay removal expenses, provide assistance with the payment of legal fees, disturbance allowance and lodging allowance where appropriate.

If you consider your experience and ability to be suitable then write giving full details of experience, training, age and salary, together with the names and addresses of two referees, to THE COUNTY TREASURER, COUNTY HALL, NORTHALLERTON, NORTH YORKSHIRE, DL7 BAL. TEL: (0609) 3123 EXT.

APPLICATIONS TO BE RECEIVED NO LATER THAN MAY 22, 1978.

#### Computer Operator/Programmers

Bounds Green
 Cockfosters

£3282-£3622 p.a. inc.

(+ Phase III salary award,

payable from July 1)

Telephone Cel Medden on 01-202 8548. for sin ignormal discussion, or write for hall discussion, or write for hall discuss and an adplication form, gunding fiel 1,13,158 if you are interested in working at Bounda Green, Ref. 113,188 for Cocklestein Post your better first class of Appointments Office (post ref). Middlete: Polysachinic. Sorrida Green Road, Johdon N.11-2 N.C. Closing days. Middlesex Polytechnic

#### City Treasurer's Department

The City Council operates an IBM 370/135 under DOS and CICS providing a wide range of services both financial and non-financial to several departments. There are plans for considerable expansion of these services by installing a larger IBM mainframe and further on-line facilities. We

#### Systems/ Applications Programmer

Sefary Scale £5208-£5612 including Phase I and Phase II Pay Supplementa (Phase III award pending from 1.7.78)

Applicants should have several years' experience in omputing with an interest in systems and teleprocess software. A thorough knowledge of DOS/VS and BAL will be preferred. Specialist DOS/VS and CICS/VS training

#### Programmer

Post No. 551

Salary Scale £3396-£4615 including Phase I and Phase II Pay Supplements (Phase III award pending from 1.7.78)

To become a member of an established project team.
Applicants should have two years' experience of either BAL or PL/I.

The Civic Offices are newly constructed and include a staff restaurant. Flexible working hours are in operation. Removal and resettlement expenses up to £500 will be satisfied a second of the second

Application forms are available from the City Treasurer. Civic Offices, Guildhall Square, Portsmouth PO1 2AR or telephone Cath O Neill on 0705 834348. Closing date 1 June, 1978.

## cityof **PORTSMOUTH**

# CAPITAL APPTS.

GRADUATES ALL AREAS 637 5551 day:636 9659 eve.

#### UNIVERSITY OF YORK Programmer

A vacancy exists for a programmer with COBOL experience to work in the University's Data Processing Section on a variety of administrative applications. The University operates a DEC system-10 computer.

Salary within the scale £3,189-£5,282 with USS,

Six copies of applications, naming three referees, should be sent by 31 May, 1978, to the Registrer, University of York, Hestington, York YO1 5DD, from whom further considerations. obtained. Please quote reference

#### STRATHCLYDE COMPUTER CENTRE **OPERATOR**

Applications are invited for a second Chief Computer Operator post in the Computer Centre. The successful candidate will be concerned with the new Honeywell 8040 secon to be installed in the University and will eventually in the Internative of the involved in the large Network souther which stready invites in the Computer Centre.

The Universities of Strathchyde, Edinburgh and Glasgow are linted by 50Kb communications lines with Node Processor to death site. Computer systems waitable through the Network include local systems (Ct. 1904), CT.L. Front End Processor, Networks 16080, Tont Cases and 2976 systems in Glasgow and Edinburgh and 1.8.M. at New Castle.

capile Candidetes are expected to have several years' operating experiency as a Shuft Lander. Knowledge of 160 deywest sys-te/ne operating under C.C.S. and experience of commenced systems, and

Applications in writing, DUGTISSO APPRICATED CO., purpose of the property of t

Scott Wilson Kirkpatrick & Partners

#### **Senior Programmers**

We need two Senior Programmers/Systems Analysis to work

Scott Wilson Kirkpatrick and Partners have many years experience in the application of computers in the fields of

experience in the application of computers in the holds of structural, civil and highway engineering and in transportation planning. Those appointed will be required to work in close collaboration with professional engineers and transportation planners in defining the problems to be solved and to work on heir own initiative in developing the necessary software.

application of Fortran IV, have 5-7 years' relevant experience and HNC/HND in mathematics, statistics and computing or computer studies. They should have experience in one or more of the following

- Statistical methods Numerical calculations
- Graphical methods
- Systems programming (mini-computers)
- Data processing

Salary will reflect age and experience.

- Flexible working hours
- Luncheon vouchers Assistance with removal expenses.

Please write/telephone for an application form to: Staff Services (Recruitment), Scott Wilson Kirkpatrick and Partners, Scott House, Basing View, Basingstoke RG21 2JG. Tel: Basingstoke (0256) 61161.

#### **EDITOR**

required for an international monthly subscription imagazine for Data Processing Management and senior Computer Personnel. An indepth knowledge of the computer industry and previous alli-round journalists experience, including subbing are essential requirements. Previous experience as an editor would be advantageous, and some time spent working in the computer industry, or with a computer user, would be desirable. Must be able to communicate effectively with industry people at all levels, control a small editorial department, and work clusely with the publisher and advertisement manager.

Apply to: Peter Thomas, Publisher, IPC Electrical-Electronic Press Ltd., 79/80 Sizckfriers Road, London SE1 9LU. Tel. 01-281 9111.

# ANALYST/ PROGRAMMER

MEDICAL RESEARCH COUNCIL

£4885-£5887 (currently under review)

The Council requires an analyst/programmer to join a small DP section at its headquarters office in Central

Applicants for this key post, preferably graduate or with an appropriate professional qualification, should have substantial COBOL programming experience and preferably knowledge of GEORGE 3 and ICL 1900 software. They should also have participated in the analysis, design and implementation of at least one successful computer system.

The DP section is currently involved in the development and maintenance of a variety of applications and roposals for new systems are well advanced. The Section has access to the Council's own ICL 1903A at Harrow and is linked to one of the largest bureau machines in the UK by RJE and MOP terminal.

Conditions of service are excellent and, in addition to a starting salary in the range above, there is a contributory pension scheme with compensatory salary supplement, staff restaurant, and an initial annual leave entitlement of 22 days. The office uses the flexible working hours system.

Please write or telephone Miss Margaret Gale, Medical Research Council, 20 Park Crescent, London W1N 4AL (01-636 5422 ext. 35) for an application form and quote reference No. P1002/69. Applications should be returned by 22 May, 1978.

£3800

FOUR IBM DOS OPERATORS

£3700 THREE ICL 1900/2960 OPERATORS Junior Ops: **£3400** Senior Ops: **£4000** 

**FIVE PDP 11 SERIES OPERATORS:** WHATEVE YOUR EXPERIENCE

FYOUR PARTICULAR JOB ISN'T LISTED ABOVE, DON'T WORRY. WE HAVE SOME OF THE BEST JOBS ON ALL MACHINES ALL OVER LONDON AND THE HOME COUNTIES. RING MIKE OAKES TODAY!

COMPUTER RECRUITMENT 01-353 6931

9 ST. BRIDE ST., LONDON EC4

#### COMPUTER MANAGER — LEEDS YORKSHIRE POST NEWSPAPERS LTD.

are looking for a COMPUTER MANAGER to work in

He/she will have full responsibility for the continuing implementation of an integrated type setting and com-mercial real-time system, using on-line order entry, and related to the critical tining disciplines associated with newspaper production.

He/she will need experience of

#Programming in BASIC plus:

#Real-time operating; and have the ability to manage and motivate on experienced team of four programmers and five operators. Equally important, he/she will need to be a down-toearth manager, a good communicator, and sympathetic to user departments and to the priorities of newspaper production. This adds up to the ability to get things

As a reward, he/she can look forward to.

#Considerable job satisfaction, in an enthusiastic team, using three PDP II / 40's;

#A good salary: #A company car

#Good working conditions:

#Good contributory pension scheme and free life

The opportunity to grow with a project which is in an advanced stage of implementation, but with expensive

If you think your experience and qualifications fit you for this position, write or phone for an application form to: W. J. Austin-Clarke, Group Personnel and Training Officer, Yorkshire Post Newspapers Ltd., P.O. Box 168, Wellington Street, Leeds LS1 1RF. Tel. Leeds (0532) 32701.

#### Puzzle answer WHITE (moving up the board) plays 7-3 at his next

turn, and then continues 5-1-5-1- ad infinitum however Black plays.

BLACK 9 **e** e 

WHITE **DUE TO PRESSURE ON** SPACE, THE SALES BIT HAS BEEN HELD Leading French Bank

#### **PROGRAMMER** with at least 2 years ex

with at least 2 years, ex-perience to help develog their Honeywell based real-time banking system. Previous ex-perience in banking or with real-time systems would be an advantage and a mature attitude essential. Salary £4,000 to £5,000 or more depending on overeinnes. depending on experience. Good staff banelits.

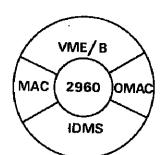
Sieff Manager Banque De L'Indochk Et De Suez 52-84 Blahopagete

London EC2N 4AR or telephone Mr. J. FL one Mr. J. Elev

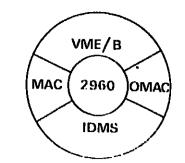
# Informatix UK & O'seas Index Phone 01-831 6055



Informatix 24 Gray's Inn Road London WC1X 8HR Telex 299539 HAVEN G HARDWARE POSITION **SALARY** SOME OF THE QUALIFICATIONS **EMPLOYER** LOCATION Io £11,000 Engineers urgently required with experience of Engineers maintaining minis/peripherals — excellent prospects for the right people. Middle East Service Industry lax free + Minis accom + car Applications Programmers Excellent prospects for ambitious programmers with 2 c £5,250 Retall trade W١ ICL yrs + COBOL. Experience on ICL equipment. First-class openings for analysts with 2 yrs + com-Systems Analysts [ransport To £6.500+ IBM/Minis mercial experience to work in a challenging environ-Berks ndustry RPG IJ Systems 3, RPG II programmers required to develop To £5,000 ioftware Kouse Minis N. Surrey commercial systems on an interesting range of minis. Opportunities for analyst/programmers with 3 yrs + experience of COBOL/RPG required to join this recently Construction SW1 + To £7,000 IBM 08 Programme Travel established UK company. To £17,000 Systema yrs + contracts now available to analyst/ grogrammers with COBOL/FORTRAN and software/ Computer Services Tehran tax tree IAS/RSXII + accom. application experience. First-class opportunities for experienced computer sales personnel to work in a challenging and rapidly developing field. Herls + Manufacturer c £10,000+ People Minis Overseas Openings to IBM assembler programmers to join this Analyst/ To £6,000 relocating to EC1 expanding organisation and work on various commercial Bureau IBM 08 + Mortgage Programmers Engineers/programmers urgently required to work on software/hardware development. Airline experience Programmers Engineers To 40.000 Amsterdam Minis Manufacturer particularly relevant. For programmers with 1 yr + COBOL (2nd language an Honeywell Programmers To £6.000 advantage) an opportunity to join a TP installation. O.P. professionals with experience of process control. networks and M/C control, or tochnical/scientific Software House Netherlands Minis background organity required. Analysis with COBOL/real lime experience required to EC4 **18M 08** develop interesting commercial systems. Analyst/Programmers with 2 yrs + COBOL experience Analyst/ )rinks/ Ta £5,760 ICL 1900 [PLAN an advantage] required to join this stimulating D.P. + perks Urgently required — analysts with 2 yrs + Business and technical background to devalop systems on a range of To £6,000 Manufacturei N. Surrey Minis + car allow. Excellent opportunities for analysi/programmers with Central 19M 08 To £7,000+ Software House rogrammers 1% yrs + COBOL experience to join a dynamic London + iravel To £15,000 Middle East PDP, GMC Self-sufficient engineers urgently required for an Computer Services Engineers l tax free + olc. expanding organization. Excellent prospects, Urgently required - DP professionals to design and Surrey implement commercial systems and manage program-Managers/ To £8.000 Mi pis Spilware House: Central London Al opportunities for PL1 programmers with 2 yrs 4 IBM 08 To £6.500+ Software Kouse Programmers -19/18 experience to work in a challenging environment. Systems Analysis with a programming background required to develop on-line manufacturing control systems. To £6,500 Middx, Manufacturing Misis. 19/19 Analysta Programmars with 3 yrs + PL/1 and least leadership Senior ' Ta £6.500 EC3 + International ' experience urgently required to join an expanding + Mortgage órganisation. Analyst/ Excellent prospects for analyst/programmers with realtime/data communications/network experience. To £15,000+ Scilware House Brussels PDP11 19/21 Programmer Opportunities for programmers with 2 yrs + COBOL/ BAL to work on DB/TP applications. IBM +. Minis To £6,000+ Manutacturer Surrey 19/22 Excellent career prospects for programmers with some Analyst/ c £6.500 WC2 analysis apportunce to loin an expanding banking. 19/23 Programmers PDP11 + Mortgage



# **First 2960** in Southampton



Pirelli General Cable Works Ltd., part of the International Pirelli Organisation, will replace its existing 1902T in its Head Office at Southampton with a 2.25 megabyte ICL 2960 in the last quarter of 1978. Pirelli General's information system comprises some 35 discrete systems

which are currently being converted to IDMS. The 2960 with VMI/B will allow these IDMS systems to be fully utilised in conjunction with TP systems and they will be linked in the medium term to on-line manufacturing systems using OMAC.

We have immediate requirements for

#### Senior Systems Analysts Initial Salary £5,200-£5,600

Competent Analysts, especially with 2900 or IDMS experience, are required to hasten the conversion of Company systems to IDMS and to develop TP access systems.

# Team Leader-Systems Support Initial Salary £5,100-£5,500

Skilled programmers are required to create an efficient VME/B environment suitable for the development of TP systems. Emulation in the mitial stages will be by BMEEP.

All posts carry -

- \* Excellent sickness, life assurance and pensions benefits
- Staff restaurant, sports and social club facilities \* Participation in the company bonus scheme
- \* Full training in VME/B, IDMS, MAC, OMAC, etc.
- \* Re-location assistance:

#### **Team Leaders-Applications Programming** Initial Salary £5,100-£5,500

Competent COBOL programmers required to take control of IDMS projects. IDMS is already being developed for first installation from the beginning of 1979 and further major steps forward will follow shortly afterwards. The introduction of inter-active TP systems is envisaged in 1979.

#### **Computer Operator** Initial Salary £3,300-£3,650

An operator is required with at least one year's experience of a 2900 series machine preferably using local batch, MAC and 112

> Initial interviews will be arranged in London and Southampton. Please send brief career details or telephone for further information to David Wainwright, O& M/EDP Manager, Pirelli General Cable Works Ltd., P.O. Box 4, Western Esplanade, Southampton SO9 7AE. Telephone Southampton 20381 ext. 104 or Southampton 768762

#### THE OPEN UNIVERSITY OF The Open University, founded in 1969, is now a major force in higher education. It has pioneered SYSTEMS ANALYSTS new forms of under-graduate and post-Starting salary up to £6000 experience education, and its future plans include developments requiring a similar Contribute to the management of ievel of innovation.

the unique British University Data Processing has been fundamental to the growth of the University and is acheduled to play a major part in its

Our operation is based on a Univac 1100/21, operating under OS 1100. We use DMS 1100 database management system and the remote processing

Salaries are good, and so is the holiday allowance – six weeks a year. The Open University is at Walton Hall, situated in the North Buckinghamshire countryside with pleasant villages and country towns within easy access. vel expenses will be paid where relevant.

If you would like to know more about these positions and our plans, please ring Milton Keynes (0908) 63648 and ask for Adrian Lepper for an informal discussion. Or send a postcard for an application form and further particulars to The Personnel Manager (DP2). The Open University, P.O. Box 75, Walton Hall, Milton Keynes, MK7 6AL.

Map shows location of terminals from main Univer 1100/21 Computer.

## Cranfield

SCHOOL OF ELECTRONIC SYSTEM DESIGN are again offering the One-week Residential Cours

MICROPROCESSORS. and their application es MICROCOMPUTERS

June 19-23 Oct. 30-Nov. 3

Organization, solitors and historians implementation of 800/96, 6900, 0100, 151-11 and 81-5lice interactions (and a second secon

#### Senior Programmer/ Systems Analyst Salary £5,044-£5,350 p.s. incl.

Borough Treasurer's Department

We need able and ambitious people

modern technology in the

who can work in this worthwhile and

challenging environment and employ

elopment of computer systems

as unique as the University itself. As a large operation, we can

offer excellent opportunities for career development.

Salary £5,044.£5,350 p.s. Incl.

A new post has been created in the Planning and Technical Services learn within our Systems and Programming division, where opportunities exist for the involvement with new projects. You should have 4 years' COBOL programming experience, and be able to supervise and monitor the progress of staff. You will be required to maintain effective: liaison with our User departments; and will be involved in dealgring and apacifying systems.

A 36 hour week, with flexitime, is in operation. Application form from Personnel Officer, Town Hall, Feliat Road, London 217 4JF (Tel. 01-531 See 24-hold mayering sirvice).
Closing date: 26th May. 1978. Please quote Ref. B.118



#### COMPUTER **ENGINEERS**

Delairco Graphics require an-gineers for the installation, service and systems support of mini-computer based high speed photo-type setting sys-tems into Europe.

Applicants should have had at least 3 years experience in the use and application of mini computers, and associated peripherals, with a knowledge of assembler language and diagnostic programming. Some experience in analogue and servo electronics would be an advantage. Call, write or telephone pelatrop Graphics 1d, 73 Clarendon Road, Watterd Hare, Tell, Watford 396.27



PROGRAMMEN

THE OPEN UNIVERSITY North-West London and Milton Keynes



## Assistant Area Manager and **Programmer Posts** to £6000

The Student Computing Solving of the University maintains a large national time-sharing network using Hewlett-Packard 2000 and DEC-20 computer systems providing a practical computing faculty to over 30,000 students via remote lessingly.

#### **Assistant Area Computing** Service Manager

he successful candidate will have a good background computing probably with previous experience both in Operations and Programming. He or she will be responsible for the day-to-day operation of the North West London installation, and will assist the Alea Manager in the provision and maintenance of a network of remote student terminals in the South of England.

#### Programmer/Analysts

We require programmers with some systems experience to build interactive computing packages to meet a variety of educational requirements ranging from scientific and an gineering applications to data processing type information

genering applications to data processing type infurmation systems.

Applicants should have a degree in a science/mathematics based discipline and have a minimum of two years' programming experience. We can offer a challenging but Irlendit working environment and an opportunity to keep abreast of the latest developments in conjuting and time-sharing computer systems. Programmer/analysts will be based at the University's headquarters at Milton Keynes.

Safary, according to apartience will be within this range C3189-C6178. In addition, there will be a London Weighting Allowance of £450 p.s. for the London-based post. The University offers a holiday allowance of 30 days plus closure weaks at Christinas and Easter. Excellent Superannyation handlife are available, and a relocation grant may be made towards the cost of response due to taking up the appointment Application forms are available, by postcaid papers, please, from the Perspinel Manager (SCS). The Open Groverstry, P.O. Box 75, Weldon Helt, Moton Keynes (AK 7 GAL, or by selephore from Application forms 53886 (24 hour arranging service).

# sanduci

#### **COMPUTER DIVISION**

We provide a complete data processing service to the Authority using an ICL 1902T providing both batch and on-line facilities under George II+ The machine is currently under review and a inajor upgrade is proposed for the early 1980's.

We need to extend our services further and we are looking for suitably qualified staff to help us do it.

#### **SENIOR SYSTEMS ANALYST**

up to £8,000 + casual car users allowance

Applicants must display an ability to communicate at all levels and have a proven record of major systems design and implementation. Experience in designing on-line systems

#### SENIOR PROGRAMMER

Applicants must have at least two years' COBOL experienc together with some knowledge of Teleprocessing.

## TRAINEE PROGRAMMER

up to £3,000 Applicants must have at least two 'A' levels in appropriat Further details may be obtained from Mr. D. Owen, Systems

and Programming Manager, on 021-558 1461, ext. 123. If you are interested in any of the above vacancies, please write giving details about yourself, and your career to date, to The Computer Manager, Computer Division, Council House, Smethwick, West Midlands, Closing date, May 19, 1978.

## **Distributed Processing??**

changeover from an IBM 380 / 40 to eight PDP 11/34's running under RSX-11M and CTS-300. We are now looking for two people to help us develop new application

systems.

Firstly, a Project Leader with experience in commercial programming, preferably DIBOL. He or she should be capable of controlling a project from system design to implementation and at the same time providing occasional troubleshooting on existing systems. On major systems the writing of programs is sub-contracted so experience in controlling or working for a large software house would be

Secondly, a Programmer to develop new technical systems using FORTRAN as the main lenguage. We are leaders in our use of mini-computers for L.P. applications. Computer Science students intending to graduate this summer could.

be suitable. We can offer you the opportunity to

- -Live and work in a pleasant rural location.
  -Work with a small team of professionals.
- Use a mini-computer dedicated to develor
   Earn attractive salaries.

Mr. N. F. Clift, Personnel Manager J. BIBBY AGRICULTURE LIMITED Adderbury, Banbury, Oxon Tel. Banbury (0295) 810281

Distributed Processing ?? — We define it as putting



We are looking for the following staff in view of important software project

#### 1) SENIOR ANALYST/ **PROGRAMMER**

with at least five years' experience in Macro and Cottol and min. one year experience on DEC-20 or DEC-10 having been successful in project management for commercial and/or banking applications for integrated programmes. We look for "Guru" type, eggd if possible 27-35 years, salary 8-12,000 pounds per year, depending on experience.

#### 2) JUNIOR ANALYST/ PROGRAMMER

with at least one year experience in Macro and Cobol on DEC-10 or DEC-20, aged 23-30 years, salary 5-8,000 pounds,

Working area Zurich, Switzerland, Excellent condition offered.
Apply to Alton Ag Zurich, Fluratr, 93, CH-8047, Zurich Switzerland, TF 1 846264, TX 57565.

## **CONTRACT AND** RECRUITMENT SERVICES

**OPERATORS** PUNCH OPERATORS TECHNICAL SUPPORT MANAGERS/ SUPERVISORS Phone EFFECTIA GRAVIS ON 01-439 6481

for the answer to all your staff problems

## CONTRACTS

#### At least 2 years' OPERATIONS experience?

If you are a freelance operator now, or intend to go freelance in the near future, contact us for details of our current and future assignments in all areas of the U.K.

> **HONEYWELL GCOS OPS** ICL SYSTEM 4 J1700/1800 DOS POWER JCL WRITERS **ICL G2 OPS** IBM OS VS1 OPS HONEYWELL MOD 1 OPS **HONEYWELL OS 2000 OPS** DATA PREP OPS-VDU & KEY PUNCH

PHÓNE 01-439 6481 (24 hour answering service) for more information or send the coupon below for immediate attention



EFFECTIA GRAVIS
NATIONAL HOUSE, 66 WARDOUR STREET, LONDON W1V 3HP
COMPUTER PERSONNEL CONSULTANTS LICENCE NO. SE(A)62

#### **OPERATORS**

(BLOCK CAPITALS PLEASE)

Complete the coupon and return to the address below, for your next PERMANENT or CONTRACT job

	or ooitmacr	•			
Name (in full)					
Address (Permanent)					
			· · · · · · · · · · · · · · ·		
Telephone: Home			Office		
Type of Transport ,			. Date of Birth		
Current Position			. Salary/Rete		
Position Required			Salary/Rate		
Notice Required/Date Ava	ilable (delete)				
Areas Preferred: First Cho	ice		Second Chair	.e	
Experience to date	: (Lest Position Fir	st)			
Company: Name and Location		To lth/Year	Hardware	Operating !	Systems/ Softwa
·					



B

EFFECTIA GRAVIS
NATIONAL HOUSE SE WARDOUR STREET LONDON W1V 3HP, 01-439 6481 (24 hours)

Signature

HEG. No. DATE CW-11/5